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Railway Age Gazette

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*Illustrated.

Application has been made for the appointment of a receiver for the Boston & Maine in what is presumably a "friendly" receivership proceeding. For many months the conflicting interests of security holders of the Boston & Maine and the leased lines have been struggled with by the president and directors.

The Boston & Maine Receivership

If the Boston & Maine's credit were now good and the necessary permissive legislation passed by the states in which the Boston & Maine operates, there would be no necessity for a receivership because of the company's inability to earn its fixed charges. The difficulties, however, were added to by a stupidly shortsighted policy on the part of state legislatures which have spent so much time haggling over the necessary legislation that the company's credit has been seriously affected. The principal leased lines have refused to accept any diminution in the rate of return which they are now getting, and to further complicate matters, some of the leased lines are attempting to block reorganization by suggesting a wholly different plan from the one agreed upon by Boston & Maine directors and directors of the more important leased lines. The patient is suffering from a complication of diseases, of which, however, neither insufficiency of earnings nor unduly high expenses of operation is one. Behind the present difficulties, however, is the fact that the Massachusetts laws did not permit the sale of stock at less than the market quotation. The result was that financing had to be done by bond issues instead of by the sale of stock. The Boston & Maine, if the receiver is appointed, will be one more name added to the long list of railroads now in the hands of receivers where one of the fundamental causes of receivership has been pernicious state regulation.

In its latest decision in the long-drawn-out litigation of the Shreveport rate case the Interstate Commerce Commission has again delivered a blow at the making of rates by a state commission which discriminate against interstate traffic. In the order issued by the Commission on August 12, like the orders recently issued in the Missouri River-Nebraska and the St. Louis Business Men's League cases, no option is left to the carriers to increase the state rates or to reduce the inter-

state rates, as in the earlier decisions of this kind, but the Commission itself has prescribed a scale of rates which it holds to be reasonable, to be applied to the intrastate traffic which competes with the interstate traffic. The Commission at first ordered the carriers to abstain from charging higher rates from Shreveport, La., into Texas than were contemporaneously charged from Dallas or Houston to other Texas points for an equal distance. When the roads sought to readjust their rates in accordance with the order the result was not satisfactory to the shippers either in Texas or in Louisiana and a new series of hearings was held. While the Commission did not entirely approve of the interstate rates of the carriers it found that the Texas rates were too low to furnish a reasonable standard and settled the difficulty by prescribing rates of its own. It has also ordered the application of the provisions of the Western Classification to traffic in Texas instead of the state classification. As was pointed out in last week's issue, in our comment on the two recent similar decisions of the Commission, how much better it would have been for all concerned if these rates, which are so directly related in their effect on commerce, could have been subject to regulation by one single authority instead of two conflicting jurisdictions.

According to Walter B. Stevens, secretary of the City Plan Commission of St. Louis, the people of that city are bewailing the fate that located their union station a mile distant from the business center, where it is "admirably situated to enable through travel to make the closest possible connection and to encourage the shortest possible stay in St. Louis."

Regulations by City Planning

This statement ought to prove interesting reading for the officers of the railroads which not long since petitioned for the right to build a new passenger station in Chicago. There they had encountered city planners of another breed, who couldn't push the passenger station away far enough nor get too many railroads into one grand union station "admirably situated to encourage the shortest stay." Apparently the city beautiful can be attained only by making the greatest possible rearrangement of the existing layout or by following the most expensive plan that can be devised, particularly if someone else can be made to pay for it. The

claim is made in Chicago that the presence of certain railway freight and passenger terminals south of the business center are throttling the growth of the retail and financial district in that direction. Consequently the railroads ought to be pushed out forthwith, although no effort is being made in the meantime to eliminate the large number of barrel houses, cheap hotels and second-hand stores which still occupy a zone several blocks in width between the "loop" district and the railroad property in question. When reforming a city, always reform the railroads first and at their own expense.

TRAVELING ENGINEERS' CONVENTION

THE convention of the Traveling Engineers' Association which will be held in Chicago, September 5 to 8, is deserving of more than passing notice. This association has an exceptionally large membership, which means that its deliberations on methods, "to improve the locomotive engine service of American railroads," its slogan, will receive wide circulation amongst the railroads in this country. It is necessary that the attendance at its conventions be as large as possible in order that the greatest amount of information may be brought out, touching the various subjects discussed. This year these subjects are especially interesting and the reports on them, together with the discussions, should bring forth a considerable amount of valuable data and information. The railway mechanical officers should give the matter of having their roads well represented at this convention their earnest consideration.

There are three important reasons why the convention should be well attended. Perhaps the most important one is the broadening of the men's knowledge by the important ideas picked up in their informal talks with fellow members on problems that they are perhaps having difficulty in solving. The next is the information they receive in listening to the results of a committee's work on a certain subject and the discussion which follows. Here is where they can perform a dual service—absorb all the information they can from fellow members and give those same members the benefit of their personal experience. It is only by such reciprocity that the most can be learned from any subject discussed.

The supply men's exhibit is also of great importance. It is well known that most of the economies effected in locomotive operation are the results of devices sold or controlled by the railway supply firms. These companies, specialists in their respective lines, spend large sums of money in studying and developing their products and come to these conventions well prepared to show the railway men on the firing line just what their devices will do. The traveling engineer is called upon to instruct the men regarding the use of more different devices, and make reports to his superior officer regarding them, than perhaps any other man on the railroad. If he is to do this intelligently he must see the devices in the form of models and be thoroughly posted on their operation and special features. It is much more satisfactory, both to him and the manufacturer, to have these devices explained from working models cut open or taken apart for the purpose, than from the finished devices which are perhaps located on some inaccessible part of the locomotive. He also may find a new device that will prove to be of decided advantage on his particular road. The exhibits are an important part of any convention, and the supply men's associations aim to make them complete and educational in nature. Last year there were 72 exhibitors at the Traveling Engineers' convention and this year there will be between 80 and 85.

The men should be sent to the conventions to give and receive all the information possible. On some roads it is the practice for the men attending to submit written reports to their superiors concerning the important things learned from both the discussions of the committee reports in the conven-

tion hall and from a study of the exhibits shown in connection with the convention. This is a splendid plan to follow, for it not only firmly fixes the benefits obtained from the convention in their own minds, but also gives the men at home the benefit of the attendant's experience.

EFFICIENCY TESTS ON THE PENNSYLVANIA

THE plan of operations in any extensive business must include Herbert Spencer's "business principle" of always assuming that things are going wrong until it is proved that they are going right. This is the explanation and justification of the elaborate efficiency testing now conducted in the train service department of our large railroads, an account of which, on one road, the Pennsylvania, is given in current issues of the *Railway Age Gazette*. And this principle is of permanent application, whatever the conditions of the past or the progress of the present. The owner of a large number of dwellings in a large city sent his rent collector persistently and regularly to tenants who he felt sure would cheat him out of part of his pay because, he said, it was necessary to prevent the cheating spirit from growing and spreading. The government checks the national banks very thoroughly, though dishonesty in keeping the accounts has long since been reduced, probably to its lowest terms. The thoroughly intelligent, conscientious, and qualified engineman checks himself against error in every way that he knows how. Whichever of these illustrations applies to a given railroad or force of men, the need of constant testing by the superintendent remains.

To get some idea of the magnitude of the work of inspection on the Pennsylvania the reader may refer to the tables and other data printed last week; and the two essays printed this week illustrate the spirit with which it is conducted. And the spirit is the feature of interest. Fault-finding is the most delicate business in the world, and this testing partakes in large degree of fault-finding. Whether such work is successful or otherwise depends on the spirit of those conducting it. It may be technically all right and practically all wrong. We theorize a good deal about *esprit de corps*—a sympathetic, enthusiastic spirit among the whole body of the employees—but our theorizing is very liable to end in talk. Here is an example of something more practical than talk. The best way to promote *esprit de corps* is to cultivate acquaintance among the rank and file and between the officers and the rank and file; and the only safe way to accomplish this cultivation is through improving the quality of the work of the men. Cultivating acquaintance without at the same time aiming at higher standards tends to a general lowering of efficiency.

It will be observed that the term "surprise test" is not used in connection with the inspections here described. Some tests are truly surprising to the engineman as, for example, in a case where he finds a distant switch signal set against him when he has a view far enough ahead so that he can see that the switch itself is set straight. In less degree it is surprising to find such a signal set at caution, at midnight, on approaching a switch at an obscure siding which is never used except in the daytime. We may go farther, and say that any signal which a runner *very rarely* finds set against him constitutes a surprise when it is set at stop; but as it is his duty to approach every signal with no expectation at all—with his mind prepared equally for stop or proceed—we cannot call this a surprise, except to the degree that we assume the runner to be careless, negligent or absent-minded. As all runners are human, and complete perfection is admitted to be unattainable, this assumption is not entirely out of place, and the term "surprise test" is not likely at present to be consigned to utter oblivion; but "efficiency test" is, of course, the accurate, comprehensive and business-like term. Spotters who are set to check cash-fare collectors

are accused, usually, of doing their very best to catch men stealing, even if they are obliged now and then to manufacture a temptation to be put in the path of their intended victim. In the same way, an inspector who tests enginemen, if not forbidden, might perhaps set traps in such a way as to catch any but the most alert; but this kind of trickery is not countenanced by any fairminded superintendent. Inspectors should, of course, be men big enough to be above using such methods.

The Pennsylvania's tests fall into three general classes: first, those on Form 686 A, under eleven heads; second, those on form 686 B, under 38 heads; and third, the fifty-one "miscellaneous" items contained in the list printed in this issue. The reader will have noticed that in the first class the number of tests made is very small as compared with those in the second. These last are called "observations." In a general way they may be called less important than the others; but they have a function more useful than may be apparent on the surface, in that they exemplify the fundamental principle that strictness in enforcing the rules in minor matters tends to produce habits of care in major matters; the habit of obedience to all the rules, whether minor or major. Not only that; this quality of obedience—the habitual state of mind which carries out the rules at all times, just because they are rules, and because uniformity of conduct is desirable and necessary—is fostered by having the substance of the various precepts constantly brought to mind even if cases of disobedience were not detected once in a year. Any engineman or conductor, of experience, who is fit for his job, can tell of small errors—avoided or quickly corrected—which have helped him to avoid larger ones. Being watched by another helps one more effectively to watch himself. The work of those 29 inspectors on the Schuylkill division would be useful and highly important if no inspector were ever able to record any infractions of the rules.

The most significant feature of this Pennsylvania record is the statement of Inspector Strebis that a large majority of the locomotive runners on his division testify to the value, fairness and usefulness of his tests. His task is to convert the minority to this position and to strengthen the convictions of the majority. The superintendent who sets out to test all of the operations in his train service will undertake an impossible task. A reckless or a dull-minded man will disregard automatic block signals, and ignore torpedoes which he thinks unnecessary, in spite of the most frequent tests that could be made; but with properly educated consciences, and minds made systematic by intelligent direction, enginemen will be vigilant without "surprise checking." The efficient inspector does just enough testing, so that with the right kind and frequency of interviews with the runners, he can carry out, to a good degree of success, this education of conscience and intellect.

STANDARD TYPE D COUPLER ADOPTED

IT must be a source of great satisfaction to the M. C. B. Committee on Couplers to find that the majority of the railroads of the country have approved its final recommendation for a standard coupler. This action is significant. It shows that the roads appreciate the value of standardization. The vote was not overwhelmingly in favor of the standard coupler, there being 416 votes cast against it. But it won by a good majority, 83 per cent of the votes being cast in its favor, whereas 66 2/3 per cent was sufficient for adoption. It remains to be seen just what the "ayes" meant by their vote—whether the coupler was adopted as a matter of sentiment or for actual use on railway equipment. The committee said in its last report that only 3,192 of the type D couplers were in use. This is a very small number. The figures next year will show just how the roads feel about this device. It would seem, in view of the active work

being done to push the standard car, that all roads would deem it advisable to put this coupler in service as fast as possible, for surely it will be a detail part of the standard car when that car is adopted.

That the coupler is the best for all around service and one that will measure up to the requirements of the present, there can be no question. Large amounts of time and money have been spent in its development. The committee has been working for five years in bringing it to a satisfactory conclusion. It has had the full support of the manufacturers, who have made sacrifices in the matter of patent rights to give the railroads one standard coupler. Now that it has been adopted the roads should hasten to use it. While it may be heavier than some of the couplers now used and therefore cost more, its service and increased length of life will tend to overcome this disadvantage and will undoubtedly make it the most economical coupler to buy. The manufacturers should also be able to handle the coupler business at a lower cost because of having but one type of coupler to provide. They can make them in large quantities which will in turn reduce the cost of manufacture. But to insure this being done the railroads must show by their purchases that there is a distinct demand for this coupler.

R. L. Kleine who, as chairman of the Coupler Committee, has so ably carried this work to its successful conclusion, is to be heartily congratulated. His reports have been exceptionally complete and free from criticism. The fairness with which the manufacturers were dealt with throughout is noteworthy. Although Mr. Kleine has finished this task his work on standardization is not ended. The executive committee of the M. C. B. Association has appointed him chairman of the Draft Gear Committee, which position he is well qualified to fill because of his long experience with the coupler question. Professor Endsley, who has so ably led this committee for the past few years, still remains a member of it, so that the valuable experience he has obtained in his previous capacity will be used in the constructive work of the future.

SQUARELY UP TO THE PRESIDENT

THE *Railway Age Gazette* said last week that it was inconceivable that the President of the United States could have proposed to the railways that they should abandon their position in favor of arbitration and grant the demands of the train employees for a so-called "eight-hour day." It seemed inconceivable that the President should do this, but it is now only too well known that this is what he actually did.

The nation regarded first with surprise, then with astonishment and finally with absolute amazement the course taken by the President. If he thought it to be generally popular he has been rudely disillusioned. The business interests have risen to the situation and are backing the railways in their insistence on arbitration with an outspokenness, an energy and a unanimity which has been surprising even to railway men. Only a small part of the press has endorsed the President's course, and in a lukewarm manner. On the other hand, a very large part of the press is savagely denouncing Mr. Wilson, and declaring that by his abandonment of the principle of arbitration he has dealt a heavy blow to the cause of industrial peace, which will tend to cause strikes, lockouts and anarchy in every branch of business.

The President denies that he has thrown over the principle of arbitration. But actions speak louder than professions. The railways repeatedly offered arbitration, and the President made absolutely no real effort to get the men to accept it. The President adds that the eight-hour day is sanctioned by social progress and justice and is not an arbitrable question. This is sheer nonsense, and if it were not it would have no application to the present controversy. To say that the question of an eight-hour day is not arbitrable when a

day of that length has been established in only a very small part of the commercial and industrial concerns of the country is absurd on its face. Furthermore, what is more important in this connection, the train employees have not asked for a real eight-hour day, and the acceptance of the plan which the President has endorsed would not establish an eight-hour day. The plan of the employees which the President has endorsed does not provide that no man shall work either more or less than eight hours. It provides that if an employee works more than eight hours he shall be paid overtime for the excess hours, and that if he works less than eight hours he shall receive a full day's pay, anyway. Preposterous as it may appear, this is the plan the President has said it is the duty of the railways to accept without arbitration; and the result of its adoption would be that railways would pay a day's pay for much less than an average of eight hours' work.

The correctness of the President's statement that the situation shows the need for a compulsory arbitration law is evident. But why did he have to let such a situation develop to teach him this, and if we should have compulsory arbitration, why, in the name of all that is reasonable, should it not be applied to this, the greatest labor dispute in the history of the world? The President says he cannot secure arbitration. Perhaps he cannot, now that he has publicly endorsed the men's position in refusing it; but if he cannot this probably is entirely due to his own fault.

The *Railway Age Gazette* believes that not only the future of the railways, but to a great extent the industrial future of the United States has been put at stake by the form this controversy has been given by President Wilson. It believes there is absolutely no justification for giving these employees in train service higher wages and then passing the burden along to the public in the form of increased rates. It believes there is absolutely only one fair and just way for settling this controversy and that is by arbitration. It, therefore, believes that the railway presidents and managers should reject the President's proposal, even though it seems probable that this will result in a strike; and it believes that if a strike comes the chief responsibility for it will rest on President Wilson. The President was in the best position of anybody to avert a strike until last Monday; and if he is not now, it is because he abandoned the strategic position which he then occupied.

NEW BOOKS

Synopsis of Decisions and Recommendations Relating to Freight Accounts.
Edited by the secretary and published by the Association of American Railway Accounting Officers, Washington, D. C. Price, 75 cents.

Mention was made in these columns in the issue of January 14 of the *Synopsis of Decisions and Recommendations Relating to Special Accounts* published by the Association of American Railway Accounting Officers. The volume relating to freight accounts has been, like the previous volume, carefully edited. It covers decisions and recommendations of the association from July, 1888, to June, 1916. The text is logically arranged and the index is comprehensive. The book includes a complete list of waybill prefixes and also the association's standard freight forms.

WOMEN RAILWAY WORKERS IN ENGLAND.—The Committee on Production has decided, on an application of the National Union of Railwaymen against the Great Western Company, that women railway workers are not entitled to the same war bonus that is being paid to the men railway servants. A war bonus is now being paid to the salaried members of the staff who receive £200 (\$1,000) a year or less. The amount is at the rate of 5s (\$1.25) per week. Those whose salary is over £200, but less than £213 (\$1,065) are to receive such an amount as will bring their salaries to £213 a year. The bonus came into operation July 1.

Letters to the Editor

WHAT IS THE MOST ECONOMICAL FREIGHT CAR?

PITTSBURGH.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

A writer asks the above question in the *Railway Age Gazette* of June 9 and I echo it with the accent on the "is," but deducing to my own satisfaction, as I hope I may to yours and your readers', that the large-capacity steel car is the most economical from every point of view rather, than the small wooden car that he favors.

Seriously, a return to the use of the small wooden car not only would be equivalent to turning back the hands of time, but would vitiate every principle of the "safety first" propaganda. But why argue? The days of the wooden freight car, whether small or large, are numbered, for the very simple reason that the staunchest car of the type in question cannot withstand the strains to which it is subjected in the heavy freight train service of the day. And when the yet heavier locomotives now under construction shall have been delivered and placed in commission, yet heavier trains will be the result and the wooden car will be even more unable to stand the strain.

The changes in type of railroad equipment that have occurred in recent years, particularly since the automobile industry has assumed the proportions it has, also emphasize the importance of building longer and stronger box cars which may be utilized for that as well as other traffic, since special equipment for a particular class of freight is always an expensive luxury and automobile equipment notably so. In the circumstances, would it not, I ask, be better in every way, for the manufacturer who could thus procure what equipment he desires at any time, as well as for the carrier which could utilize it for general traffic when not employed specially, for a standard box car 46 ft. long to be adopted, although it goes without saying that such a one could not be built of wood economically?

The only conclusion to be drawn from the writer's statistics, as embodied in the table with which his communication is embellished is, I think, that it emphasizes the importance of changing the classification of freight, as well as the tariffs, so as to bring both to date in order that they may perform their part in the matter of filling modern equipment. As things are now, the highest classes of traffic are accorded the lowest minimums, as automobiles, for example, which with a tariff minimum of 10,000 lb. average only 12,000 lb. to a car, notwithstanding the lading occupies all the space of 100,000-lb. capacity car. In such cases, why should not the minimum be charged for at least 50 per cent of the car's capacity? Similar illustrations may be given regarding nearly all high-class freight.

The communication under review ends with the comment that it is interesting to note that the great commodity "merchandise" averaged only from five to eight tons per car of 50,000 cars selected by the writer for investigation, and that in the circumstances it was absurd to build cars of 80,000 lb. capacity to carry loads of 10,000 and 12,000 lb. This is undeniably true if the railroads purpose continuing old-fashioned practices, such as making low minimums for high-class freight. But the highest classes of traffic require the most costly service and are, therefore, the least remunerative, notwithstanding the higher rates they bring. On the other hand, open car traffic, technically known as coarse freight, coal, ore, coke, etc., moved slowly, in reality is far more remunerative to the carrier than is the high-class freight

moved in regular merchandise cars under guaranties of specified deliveries regardless of quantity, such service being, in effect, express and very costly.

Referring to the writer's rejoicing over the order placed recently by the Chicago & North Western for 1,000 34-ft. wooden box cars, I am convinced it was prompted by the necessity of the road for additional equipment immediately, and because steel for larger and heavier cars was not procurable and would not be for months to come.

TRAFFIC MANAGER.

SAVING CAR-DAYS AT TEAM TRACKS

WILLIMANTIC, Conn.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

Your correspondent G. D. M. (July 7, page 4), writing on the Economical Use of Team Tracks, presents some interesting speculations. As every one knows, this is a very difficult subject and possibly we shall not make much progress except in the field of speculation. Nevertheless, every trainmaster and all local freight agents have numerous very practical questions in this field, and a perusal of G. D. M.'s letter leads me to offer some speculative thoughts of my own.

In the first place, however, let me mention one or two facts, not speculations. In taking the average of ten prominent stations on the New York, New Haven & Hartford, it is found that 59 per cent of the carloads of bulk freight go to team tracks, and 41 per cent to private sidings. This fact confirms the view that what may be called the small or miscellaneous business is of sufficient consequence to demand careful attention. At Providence 88 per cent of the cars go to team tracks, while at Waterbury the percentage is only 20. No uniform rule will apply to all cases; each must be dealt with by itself. On a certain private siding the average delay of cars is only one day; while at another it is five days.

There is an ample field for study, also, in the detention of freight cars at freight houses. There is one freight house where the average detention is only one-sixth of a day; but at other places the average is a good deal more than one whole day. There is one team track where the average detention is only 1.5 days, whereas the average on the team tracks at a number of large stations is 2.5 days. There are similar variations at private sidings.

The most suggestive part of your correspondent's letter is that referring to the need of securing co-operation among teamsters. The railroad agent has to go out of his own field—perhaps out of any legitimate field—if he is to do missionary work among teamsters; but going out of one's field is now strictly regular; the traffic department spreads itself out into the fields of the farmers wherever it pleases; and so the operating man, therefore, need have no fears. To make improvements in the railroad's part of this service it is necessary at the outset to consider whether one will take the empty cars out of a given team track oftener than once in 24 hours. Once a day is a simple and workable plan; but just as soon as you try to do more you greatly increase the cost for locomotive service. The yard engine cannot wait for cars to be unloaded, as it would in the case of self-clearing coal cars; but every agent and yard master should be on the lookout for places where savings of this kind can be tried.

The greatest dampener, however, neutralizing one's best efforts, is the fact that in normal times the demand for freight cars, calling for special attention, exists only for three or four months in the year. During the other eight or nine months everybody wants to be using his energies in some other direction. In this situation, it may well be that all that the car-service superintendent or anybody else can do is to exercise moral suasion and moral influence wherever possible.

An agent at a freight station seeing an enterprising teamster, who, when he has a rush of freight, hires the teams of his neighbors or his competitors and who thus introduces a

novel element of economy, would do well to commend that teamster in every way possible. His common sense ought to be advertised. The owner of a horse or a team of horses, or an automobile truck, who allows his property to stand idle when he might make a little money, perhaps earn his regular wages, by lending his facilities to other teamsters, ought to be instructed how to take advantage of his opportunities. The railroad, as a prospective beneficiary of such efficiency, may rightfully do the missionary work necessary. P. H. F.

LOCOMOTIVE REPAIR FACILITIES

BALTIMORE, Md.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I have been very much interested in the editorial on Locomotive Repair Facilities, published on page 137 of the July 28 issue of the *Railway Age Gazette*. The statement made in this editorial agrees exactly with my own observation. The workings of the Federal Inspection rules, which went into effect January 1, are making it more and more apparent that good facilities for the quick handling of repairs will be absolutely necessary in the future, if we are to keep the number of locomotives held out of service for repairs down to a minimum.

M. K. BARNUM.

ANOTHER VIEW OF THE RAILROAD CLERK

SPRINGFIELD, Mo.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

I have read very carefully the letter printed in the *Railway Age Gazette* of March 17, entitled "The Ambitious Railroad Clerk," and see a lot of truth in it, but I also see what I may be permitted to term overdrawn "glooms."

In the first place, with all due respect to Mr. J.'s clerk, his vision must be limited to the accounting and auditing departments; he has most certainly left out several of the most promising departments in which a young clerk may get his training for a responsible position in the company, namely, the transportation and operating departments.

These are not theoretical departments; they are undeniably practical departments; therefore, a man with 14 different views of a question, one that has spent his time looking after his immediate position and has applied his 14 different views with such a degree of caution as to lose the confidence of his superiors, in a time when quick practical action was essential, is not the one when a minor official position opens up, to be promoted. The practical man, who, in a tight position, has used tact, and while looking at the question at issue from all sides, renders a decision which in nine cases out of ten is correct, and also renders it in such a manner as to leave the impression that he is fully conversant with what he is talking about and impresses his hearer of the fact, is the one the management is interested in.

While I have not risen to any high official position—in fact, my name is not even in the *Official Railroad Guide*—that fact does not prevent me from looking on my work as an officer would. In my own mind I make decisions on cases that come up for decision of the officer for whom I work personally, and after his decision has been made I compare mine with his and profit by his judgment.

Is it immoral to "drift along" in clerical positions when there seems to be no future? It is immoral to the man himself because it is only a matter of time until he becomes "deadwood" in the office—he has long since ceased to even show an inclination to want anything better—he is in a rut. Whom can he expect to take an interest in him now, if he doesn't take an interest in his own welfare?

If you intend to hit the bull's-eye of success, you must aim and shoot straight. Don't allow your eye to wander, your enthusiasm to drop, for if you do your shot is going to fall short, or go wide of the mark. Moral—Hit the ball.

ANOTHER ONE OF THE CLERKS

Convention of the Master Blacksmiths

A Digest of the Papers and Discussion Presented at the Association's Annual Meeting Last Week in Chicago

THE twenty-third annual convention of the International Railroad Master Blacksmiths' Association was held at the Hotel Sherman, Chicago, Ill., August 15 to 17, 1916, T. E. Williams, of the Wabash Railroad, presiding. The meeting was opened with prayer by Reverend De Lacey, and the association was welcomed to the city by a representative of the mayor. Mr. Williams, in his presidential address, called attention to the desirability of all the members participating freely in the discussion and telling fully of their experience in the various subjects discussed in order that the members of the association may profit to the fullest extent by this convention. W. J. Tollerton, general mechanical superintendent of the Chicago, Rock Island & Pacific, presented an address of welcome.

ADDRESS OF MR. TOLLERTON

Associations, such as the Railroad Master Blacksmiths', are of the utmost importance. Upon you gentlemen falls the burden of advancing our knowledge concerning improved methods of blacksmith shop practice. By means of your various committee investigations and the discussions of the re-

it would be of enormous benefit to all railroads if this association would formulate some kind of a standardized schedule of blacksmith shop practice. As an example of what I mean, let us consider the process of case-hardening; with all the information we have on this subject, would it not be possible to arrive at some conclusion as to the exact procedure to be followed to give a case-hardened product of maximum value in railroad service?

The present convention is assembled at a very serious period, and at a time when the need for economical methods and the conservation of material is more pronounced than at any other time in the history of this association. One of the most promising avenues for saving now open to the railroads is in the scrap dock. By means of the oxy-acetylene and electric welding processes the blacksmith is enabled to weld and repair a great many parts which he formerly was obliged to scrap. In the reclamation of material considerable study and the use of considerable judgment is of prime importance in determining to what extent we should go in placing old material back in service. The fact should not be lost sight of that many locomotive and car parts fail because they were not properly designed in the first place. It would be poor economy to reclaim such parts unless they could be reinforced or a change effected in the design, such that the original defect will be overcome. In all of this work an accurate determination of costs is of first importance, and this association will agree, I think, that cost-keeping methods in the average railroad blacksmith shop are open to considerable improvement.

TUBE WELDING

George Massar, of the Cincinnati, New Orleans & Texas Pacific, presented a paper on this subject, in part, as follows:

With the high pressures of steam which are now commonly carried on the locomotive boiler, it is essential to provide good welds when safe ending boiler tubes. In the first place, the tube end and the safe end should be properly prepared. Second, a good furnace should be provided which will heat the tubes quickly and evenly, and, third, a good welding machine should be used and placed conveniently near the furnace. It is generally conceded that lap welds are stronger than butt welds. It is much easier to work a lap weld and to keep the tube straight. Also there is not the same danger with the lap weld that there would be in the butt weld if the weld should let go or pull apart. With the lap weld there would only be a small leak, for the lap would still hold the body of the tube in place, but when a butt weld fails, the body of the tube drops down and leaves the full area of the tube exposed, which is almost sure to cause serious injury.

Close attention should be paid to the proper scarfing of both the safe end and the tube end. A sharp short lap of from $\frac{1}{2}$ in. to $\frac{5}{8}$ in. is advisable on small tubes. When the joint is prepared in this way the place at which the weld is made will not be much thicker than the gage of the tube and it will heat evenly. Where the tubes are not scarfed there is a double thickness of metal to heat, and there is a tendency to overheat and burn the tube just back of the joint, particularly with steel tubes. There should be a proper plan adopted for scarfing the tubes and the safe ends so that the metal of the body of the tubes and the safe ends fit closely together. Care should be taken to keep the heating port in the oil furnaces, which are now commonly used for tube welding, narrow so as to concentrate the heat on the weld. If this is neglected and the opening is too broad the safe end will be

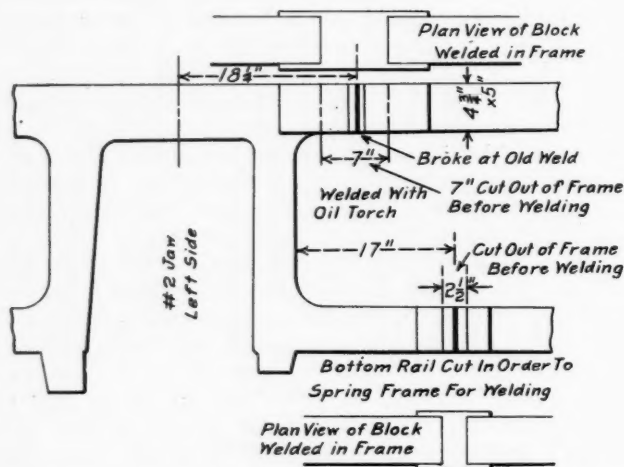


Fig. 1—Location of Oil Weld on Frame of Passenger Locomotive

ports in conventions you, as members of this association, may interchange ideas with the privilege of choosing therefrom those which will tend toward a constantly increasing economy and efficiency in railroad operation. The blacksmith's art is probably the oldest metal working craft in existence, but during the long years of its practice very little real progress was made until about 60 years ago. One might truthfully say that the modern blacksmith shop came into existence with the invention of the steam hammer. Since then a wonderful advance has been made, until now we have forging machines capable of producing accurate and intricate forgings in a few minutes that formerly would have required hours of hard labor. I believe that the development of the forging machine and the perfection of machine made forgings is the line of future progress for the modern blacksmith. A very essential part of your work as an association consists in the interchange and publication of machine forging methods now in successful use on the many railway systems with which you are connected.

While reading the committee reports and various papers presented in past conventions the thought occurred to me that

overheated on the tube sheet end where it has to stand the rolling, beading and prossering. The mandrels on the welding machine should be kept well up to size. On small locomotive tubes the welding and swedging should be done at the same heat and thus eliminate the cost of a reheating.

All superheater flues should be welded at one heat. It is a very simple matter to do this by getting the proper heat on the flue, which can be done by watching the heat inside of the flue. The bumper should be removed from the back of the furnace, and the heater stand at the back and hold the safe end in place with tongs until it shows signs of the welding heat. The safe end could then be given a few light taps with a hand bumper until it is well set in the flue. When

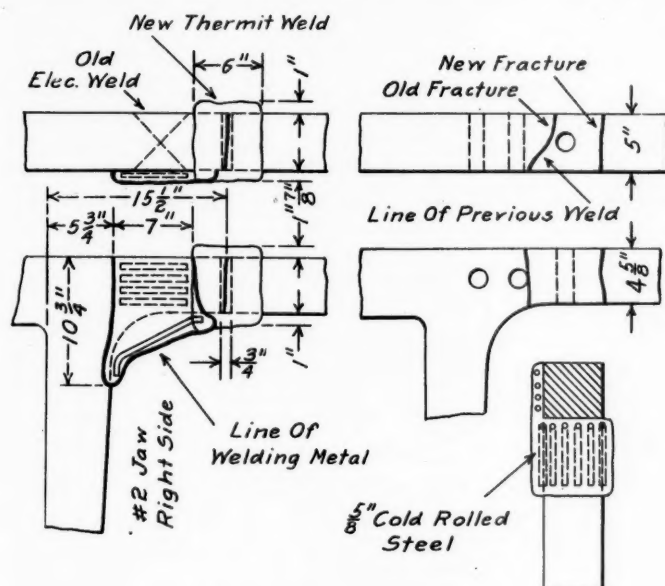


Fig. 2—Cast Steel Frame Thermit Weld

the metal on the inside shows that it has been heated to the proper temperature the flue with the safe end should be placed in the welding machine and welded.

Good heating is the most important part of tube welding. No matter how well a tube is scarfed and prepared, or what type of welding machine is used, or in how perfect a condition the welding machine is kept, results cannot be obtained unless the metal is properly heated. Overheating of the metal causes more accidents than underheating, for in the first case it will break off abruptly and allow the tube to drop, giving a full opening for the escaping water and steam.

L. R. Porter of the Illinois Central also presented a report on this subject, saying in part, as follows: The tube welding work on the Illinois Central is done by the boiler shop forces. The tubes are trucked from the engine to the boiler shop where they are run through an Otto rotary machine and then passed to the cutting machine. One man handles the two machines. He cuts off one while the other is cleaning. One man applies the safe ends, sticking them on, welding them and swedging them, averaging about 22 tubes per hour. The tube is swedged and welded with a Draper pneumatic hammer. The superheater flues are swedged in the smithshop under a Beaudry No. 7 power hammer. In this hammer dies are used, but no mandrel of any kind. The work is done with very good success. Two men will swedge 12 tubes per hour and carry them in and out of the shops, as the room is limited and they cannot be piled inside.

FRAME MAKING AND REPAIRING

G. A. Hartline of the New York Central West presented a paper on this subject, from which the following is taken: The portable system of repairing locomotive frames in position on engines has largely solved the problem of doing this

class of work in roundhouses or machine shops where no other facilities are at hand. One of the most essential features in making the different kinds of welds is to have a clean surface at the point where the weld is made. Great care should be taken to avoid all strain in cooling, as the frame is liable to break in some other location. In our shop we use the oil furnace and the electric processes of welding. Fig. 1 shows an oil weld made on a passenger engine. The upper and lower rails were welded at the same time. Enough of the fracture was cut away to leave both ends square. A block was finished all around on the inside to make a good fit between the rails of the frame. After the frame had been jacked apart three-quarters of an inch the block was inserted and caulked with an air hammer all around to keep out any dirt or scale that might accumulate at this point. A brick furnace was built around the frame with a two-inch clearance. The burners were located on either side of the frame and the frame brought up to a welding heat. A few of the bricks were then removed and the frames rammed on both sides, after which the bricks were replaced and the frame allowed to cool off. This frame was welded the latter part of December, 1914, and is still in service.

Fig. 2 shows the method of welding a locomotive frame by the electric process. The fracture was cut away to an angle of 45 deg., and the opening filled in to the full size of the frame. It was then reinforced, as shown in the illustration, with strips of 5/8-in. round cold-rolled steel on the bottom and sides, this steel being welded into place directly over the crack. The top and inside of the frame could not be treated in this manner on account of a heavy cross brace that was located at this point.

The following is from a paper on this subject by P. T. Lavender of the Norfolk & Western: In making or repairing locomotive frames the first essential is having the necessary facilities to handle the heavy frames which are constantly increasing in weight. The blacksmith should have at all times sufficient experienced help so that the job can be properly and quickly done. Welding frames with Thermit, oil or by the electric process, has proved satisfactory where the repairs to be made are of a light nature and when the engine is being rushed back into service. In repairing with the electric process the frames are prepared in a manner similar to that used when they are welded on the anvil. The break is V-ed out with an oxy-acetylene torch and then welded up by the electric process. When an engine comes in for heavy repairs and the frames are in bad condition they are brought to the smithshop and welded on the fire.

DROP FORGING

H. E. Gamble, of the Pennsylvania Railroad, presented a paper on this subject, in part, as follows: In drop forge work, if the dies and trimmers do not have the proper treatment and are not made from good steel they will not last. Carelessness in making them will cause many delays and also much expense. It is also bad practice to overtax any hammer. The expense in replacing rods, dies and anvil blocks would more than pay for the purchase of a hammer of larger capacity. In the Juniata shops of the Pennsylvania Railroad, the Chambersburg, the Erie and the Morgan hammers are used. The steels used for the dies are Colonial, Carpenter, Sanderson, Vanadium cast-steel, Hardtem, Chrome Vanadium (S grade), Park alloy, Mayari, Adamite and 45-point carbon well hammered bloom steel. For hot trimming we use axle steel, bloom steel, Crescent hot work No. 2 Peerless A. Firth-Sterling, Colonial and Sanderson No. 3 to 3 1/2 temper. We make out of the scrap iron or steel all of the large forgings that can possibly be made. The extra cost for roughing dies and preparing the metal for the forming dies should be carefully considered, as it all means time and money and also reduces the output of the hammer.

The first question to arise when the dies or trimmers are

being designed is how much strength is required to withstand the working conditions. That material should be used, the grade and carbon content of which will admit of its being treated so that the longest wearing surface can be obtained in conjunction with sufficient strength to resist the working conditions. We must have a sufficient working knowledge of the critical points of the steel or the nature of the mineralogical changes in the steel when it is heated in order to properly prepare the dies and trimmers. Keep the tools and furnaces up in good condition, as the time spent in fooling around with an old tumble-down furnace will cost more than if money were spent for a good furnace.

Good steel for dies may be found in the following three brands: Sterling, Mayari and Hardtem. This material is forged in suitable blocks for drop forge work, and is a special alloy steel treated before leaving the mill, so that it is not necessary to harden it. After the impression is worn out it is not necessary to anneal this steel; just simply plane and resink the die and it is ready for use. A good steel for piston rods is the Heppenstall, which is treated at the mill and delivered rough-turned. This gives excellent service.

Unless everything connected with the drop hammer is properly handled by the operator you are bound to have broken dies and piston rods. Sediment under the section blocks and dies not properly treated and keyed up will give bad results. Make the tongue on the dies of good width to insure a good bearing on the section block; it saves liners and keys. Always have the guides adjusted and oiled regularly. The operator must examine the many parts of the drop hammer regularly. It will overcome many an accident. Use plenty of lubricant when necessary to insure good service.

TOOLS AND FORMERS

George Fraser, of the Atchison, Topeka & Santa Fe, presented a paper on this subject, in part, as follows: There is

SPRING MAKING AND REPAIRING

The following is from a paper by W. C. Scofield, of the Illinois Central, on this subject: Many roads are discontinuing tapering the ends of the spring leaves, as an unnecessary expense, but it does not make as nice a looking spring. It is the practice on the Illinois Central to fit and cool the springs in an oil bath at the same heat. The open hearth spring steel over 5/16 in. thick is not flashed, but left as it comes from the oil. It is very important that the heat in a fitter's furnace be regulated properly and easily controlled, as a uniform heat is absolutely essential in making good springs. The best method of fitting is to use a machine that sets each leaf to leaf by air or hydraulic pressure and one which operates quickly. The steel must be of uniform grade and quality, as it is self-evident that where different kinds of steel are used in the same spring, all being heated and treated the same, the spring will not give the proper results. In repairing springs, if the leaves are not broken or worn too much and are of the proper set, they are not overheated or refitted, but are placed in the spring as required. Vanadium steel springs are being used by many roads, which report excellent results.

J. W. Riley, of the Lehigh Valley, contributed a layout of the spring plant of that road at the Sayre, Pa., shops, which is shown in Fig. 3.

CARBON AND HIGH-SPEED STEEL

George W. Kelly, of the Central Railroad of New Jersey, presented a paper on this subject, in part as follows: The forging of carbon steel always requires skilled workmen, especially for the larger tools, such as taps, reamers, etc. Carbon steel should be hardened at the lowest possible heat, and always on a rising heat. Steel may be forged at a higher heat than the hardening heat, but should, in all cases where a large or expensive tool is being forged, be annealed before be-

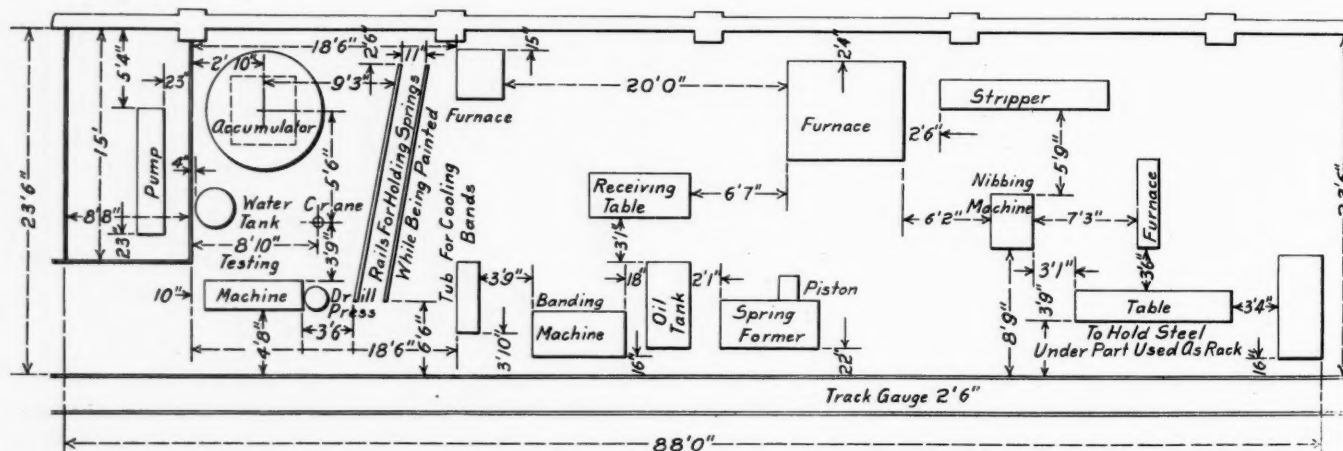


Fig. 3—Plan of the Spring Plant of the Lehigh Valley at Sayre, Pa.

no place about a railroad shop where such a saving can be made, provided the shop has good tool equipment, as in the blacksmith shop. Good shop organization and a first-class supply of good tools of all kinds are necessary to increase the output and reduce the cost in the smithshop. In the Topeka shops we have about 1,500 dies and formers of all kinds.

A method was shown of reclaiming car axles. The scrapped 5-in. by 9-in. axles are made over into 4¼-in. by 8-in. axles, the 4¼-in. by 8 in. into 3¾-in. by 7-in., etc., by the following method: The axle is heated and is made to the correct length. At the same time the collar on the end of the axle is swedged down to the size of the journal. The axle is then annealed. The ends are heated and forged in a forging machine.

ing heated for hardening. We are welding tips on tire steel for all lathe tools by the electric welding process and obtaining very good results. When the 6-in. by 10-in. special milling cutters are worn down they are box annealed, recut and hardened, as follows: They are first preheated in an oil furnace up to 1,400 deg. F. They are then passed to a specially prepared hollow fire and heated to 2,000 deg. F. The cutting edges are protected by powdered borax. The cutter is then dipped into a cask of melted lead. Running water is allowed to circulate around this cask. When the lead is set it is reheated and the tool taken out and cooled in oil. The tire-forming tools are hardened in the same manner. This gives very good service with no breakage.

J. J. Conners, of the Atlanta & West Point, also presented

a paper on this subject, from which the following is an extract: During the past two years we have been welding high-speed steel on axle steel shanks by the oxy-acetylene method, and in this way use up all of the small high-speed steel. The smaller pieces of high-speed steel are drawn out for use in smaller tools. In annealing the high-speed steel it is heated to a red heat and placed in an iron box or pipe and covered with pulverized charcoal, put in the furnace over night and removed the next morning, but the box is not opened until it is thoroughly cooled. In hardening the high-speed steel lathe and planer tools, they are heated to a high heat sufficient to just about burn the point of the tool and cooled in a fan blast. The taps or reamers made of high-speed steel are hardened in oil.

D. M. Dulin, of the Norfolk & Western, also presented a paper, in part, as follows: We have been welding high-speed steel tips on carbon steel shanks by the electric butt welding process. The tools to be welded have the surfaces ground bright and are clamped in the vise, and the current applied. A vise screw is operated to press the two metals together as the temperature increases. The power required to operate the machine is from $\frac{1}{2}$ to 5 volts, and 8,000 to 16,000 amperes. We weld tools from the smallest size up to 2 in. by 3 in., with good success. The tools are dressed after welding and are hardened in an air blast or oil, as preferred.

FROGS AND CROSSINGS

George T. White, of the Missouri, Kansas & Texas, presented a paper on this subject, saying, in part, as follows: At the Parsons shops of the Missouri, Kansas & Texas we manufacture 150 rigid frogs per month, and repair 30 spring frogs per month, in addition to various other items, such as guard rails and reinforced switch points. In making repairs to frogs and switches our Oxweld plant plays a very important part. We have several switch points which were built up by the Oxweld system that have been in service six or eight months and are good for several months to come. This is about the length of service we get from most new points on this line. This road also operates a repair car fully equipped for making light repairs to frogs and crossings on the road. Three men, who accompany the car, make the light repairs wherever they may be necessary, and where they can be made without removing the frog from the track. This car is sent over the entire road. The road's repair gang keeps the shops at Parsons advised as to when the frogs will need to be replaced. This gives the shops time to build the frogs for any given place.

D. Huskey also read a paper describing briefly the new frog and switch plant of the Chicago Great Western at Oelwein, Iowa.

Discussion.—Mr. White stated further that switch point repairs by the Oxweld methods cost an average of \$1.25 each, and repairs to a spring frog cost an average of \$2. Some, however, will run as high as \$4 or \$5. It has been found on the Missouri, Kansas & Texas that this class of repairs will give practically the same life as a new point. However, it was stated that the Frisco did not find this to be the case. On that road it is the practice to raise the point by splitting the web and then fill in the web by the Oxweld method, thus using the original material on the point. The use of manganese rail for all frogs and crossings was strongly recommended.

RECLAMATION OF SCRAP

J. Harkins, of the Southern Pacific, presented a paper on this subject, from which the following is taken: There is no department in connection with a railroad that should be given more attention than the reclaiming department. This is particularly true at the present time when all classes of

material used in railway equipment have advanced in price from 10 to 50 per cent, and in some cases even more.

There are many articles that can be made from scrap and obsolete material as a substitute for new material. Old boiler tubes when flattened can be used for making car door plates, washers, split keys, pipe hanger clamps, angle irons, etc. Coil springs of various sizes, after having been straightened, are used for making lining bars, drift pins, etc., and can also be rolled into smaller sizes and used for making new springs. Thirty-ton car axles are made from scrap 40-ton axles, and 40-ton are made from 50-ton axles, this being done by upsetting the collars on the journal end and drawing the axles to the proper length.

Scrap tire steel can also be used for making standard track claw bars, pick points, tamping bar ends, headers and dies for bolt forging machines and shanks for lathe and planer tools of various sizes. These tire steel shanks with high-speed steel tips are giving very good service. At our shops we endeavor to reclaim all serviceable material. The remainder is sheared to length and turned over to the rolling mill, where it is rerolled into all standard sizes of bar iron and shapes. This iron is then shipped to all outside points on the company line. The average amount of scrap reclaimed each month in this mill is about 4,350,750 lb.

J. H. Daltry, of the Erie, also presented a paper on this subject, of which the following is a part: Lathe tools are made out of scrap tires with high-speed steel tips welded on by the electric process at a cost of about 10 cents per tool. They are giving very good results. Worn coupler knuckles are reclaimed by welding on a piece of $\frac{3}{8}$ in. by 2 in. iron where the knuckle is worn. The cost of labor for this is 15 cents a piece for all classes of knuckles and about one pound of wrought iron is used. The reclaimed knuckle is practically as good as new. The side ladders on box cars are made from scrap boiler tubes flattened out under the steam hammer, for which \$1 per 100 is paid. This is used in place of the $\frac{3}{8}$ in. by 2 in. iron which is generally used for this purpose. Tube beading tools are also made out of tire steel and are doing the work just as well as those tools made from tool steel. All the hexagon-headed bolts removed from locomotives when undergoing repairs are annealed and turned down to a smaller size and used again. All of the blacksmith tools, except chisels, are made from scrap tire steel. Boiler and machinist hand tools are made out of scrap coil springs and give very good results.

TOPICAL DISCUSSIONS

Beside topical discussions on Oxyacetylene and Electric Welding, and Case-Hardening, H. E. Gamble, of the Pennsylvania Railroad, gave a brief talk on the heat-treatment of metals, referring to his rather extensive paper on the subject printed in previous proceedings. He stated that the steel should be heat-treated according to its carbon content. The steel should be analyzed before being treated to find out just what its percentage of carbon is. The smaller articles are heat-treated in oil and the larger ones in water. The success of heat-treating is dependent to a very large extent on the facilities for doing the work. In annealing rods it was stated to be bad practice to anneal one end of the rod at a time. The entire rod should be heated and annealed at the same time.

In replying to a question concerning adjusting the length of a heat-treated side rod on the smith fire, Mr. Hutton, of the New York Central, stated that if the heat used in making this adjustment was at a temperature lower than that used in treating the rod the heat-treatment would not be affected. On the other hand, if the heat used in adjusting the rod was greater than that used in treating it, it would be necessary to reheat-treat the entire rod. Attention was called to the articles on the heat-treating of steel in the Railway Mechan-

ical Engineer for July and August, and it was voted to have these articles reproduced in the proceedings of this convention.

OTHER BUSINESS

H. D. Wright, Cleveland, Cincinnati, Chicago & St. Louis, read a paper on Piece Work.

A paper was also read on the use of powdered coal as fuel for blacksmith shops, by C. F. Herington, mechanical engineer of the Bonnot Company, Canton, Ohio. The following officers were elected for the coming year: President, W. C. Scofield, foreman blacksmith, Illinois Central, Chicago, Ill.; first vice-president, John Carruthers, foreman blacksmith, Duluth, Missabe & Northern, Proctor, Minn.; second vice-president, George T. White, foreman blacksmith, Missouri, Kansas & Texas, Parsons, Kan.; secretary-treasurer, A. L. Woodworth, Lima, Ohio. The secretary reported a total membership of 237. Chicago received the largest vote for the next place of meeting.

ROADS THAT LEAD TO THE ITALIAN FRONT

By Our Special European Correspondent

The visitor to the Italian front who has prepared himself to meet with all kinds of physical inconveniences and to encounter an infinite confusion is likely to be considerably surprised. He gets up out of his bed in the sleeper, and has his eggs and coffee in the dining car, with all the leisure of a senator approaching Washington, D. C. Then, unless he wishes to read his morning paper, brought by the fast Paris-Milan or Lausanne-Milan express, and delivered at a station while he was asleep, he sits by the window and watches the telegraph poles whiz past at a forty or fifty-mile rate. He sees spread before him the smiling plains of northern Italy, rich with the fruits of industry. Here and there against the near horizon he sees the brick colored cupolas and cathedral towers of the proud little towns that used to fight each other or Austria, as the humor swayed them, and that are now fighting Austria to the drop of the hat.

He sees here and there little groups of women working in the fields, and at the way stations soldiers in their almost invisible dun-colored Italian uniforms waiting for the slow trains that take them forward. He sees here and there long lines of freight trains on the sidings, but always with a smoking engine at the head, ready to pull on toward the front when their turn comes. Finally the train slows down—it is a train of eighteen to twenty light coaches after the Italian fashion—and the crowd of civilians and soldiers who have business at the army headquarters tumbles out, swarms over a twelve-track platform, passes line after line of waiting trains, towards the exits. Here the visitor before he can pass out must see an officer, show his papers, and, these being in order, accept the guidance of a soldier to his hotel, the aforesaid soldier being responsible for him. He must not leave your presence an instant until he has been fully recognized at headquarters and given new papers.

Outside, the visitor meets an instant's feeling of confusion. The little station of a little city, of the quiet, uneventful European kind, has overnight, so to speak, become the brain center of all the efforts of Italy. It is crowded; there are no rooms left in the hotels or the houses, the streets are jammed with hospital wagons, carts, and every animate or inanimate object that can move or be moved. One gets the impression of a country summer resort that has suddenly become the center of three or four big city picnics, or of a county capitol of the South that is holding a circus, a Chautauqua, and a fair all in the same week. Here it certainly isn't safe for a chicken to cross the road. What more, the sky above is crowded. The guide says that the

town has just been bombarded by a group of aeroplanes, and the watchers are out, coming home after the chase. He says it just as if he were stating there had been a heavy dew that morning. In fact, that is the spirit of the town, and of the whole army. Who cares anything about an aeroplane raid? Of course it might pique the airmen to let the Austrians put one over on them, to fail to beat back the Austrians. Their personal efficiency would be involved. But nobody else is interested. If a barbed arrow or a bomb strikes you, well, what about it? Other people have been so struck and they haven't made any fuss about it. Why should you? Mind your own business, do your work, and let the Supreme Command worry.

How can confusion or excitement exist when such a state of mind prevails?

Right here I want to tell an incident that is the keynote to the whole Italian war, that will interpret exactly the placid state of mind of the people supposed to be the most excitable in Europe. It will show how marvelously efficient is this transportation organization built up in a new country, the enemy's country—for the Italians are here in Austrian territory—an organization built right up out of nothing by sheer force of brains and executive ability, helped along by the temperament of a nation. The incident culminated long after I had left the war zone, but this is the place to tell it.

Two men, civilians, boarded a train one night at Brescia, at the foot of the Alps, on a bee-line south from the Swiss frontier, and rode across country as far as Mestre. There they got off to change cars, the train going on three miles further to war-clad Venice. The next day one of the men said to the other: "By golly, I've lost my camera and field glasses." A hunt high and low in the baggage and recollection of the two men was fruitless. The camera and field glasses had disappeared somewhere, but where neither could recall.

Weeks after, when one man had gone to France and the other to Rome, the second received an official note inquiring if he or his companion had not lost a camera and a pair of field glasses. A photograph developed from one of the films in the camera showed him that the objects were those lost by his friend. In due time the camera and field glasses reached their owner, but minus the films, these doubtless being regarded as military in their nature. The astonishing part about this incident is that at the time the objects were lost the Italian army was suffering temporary though serious reverses in the Seven Commune region and it seemed a waste of time to bother with lost objects.

The explanation is that a system has been established that can't break down. The lost objects were picked up in the passenger train, duly turned into the railroad's lost property room at Venice and then, as they seemed of a military character, were turned over to the local military authorities, who in turn forwarded them to the headquarters of the army, where the films were examined and the face of one of the owners recognized.

This is not a press-agent story. The owner of the camera and glasses is Will Irwin, the magazine writer. His companion was myself.

This incident, if let stand alone, might seem exceptional. But it does not stand alone. For weeks I rode over this vast front of mountains and plains and rocks and rivers and not once did I see a stalled train or a wrecked train, except when the fact was due to enemy bombardment. But once did I see a stalled automobile and that was also due to an Austrian battery that was shelling at haphazard a road during the night, it having previously by day taken its range, the shelling going on in order to cut off troops from their provisions. But once during this journey covering hundreds of miles of territory did I see a near-collision, and this was of my automobile while driving in a pouring, blinding rain at dusk. Its wheels were bumped into by a

heavily-freighted army wagon that was taking more than its duly allotted half of the road.

According to the official statistics furnished me, this army has constructed 600 miles of new roads, has built 10,000 military provision or troop sheds, has run 20,000 miles of telephone wire, has built 125 miles of cable railway lines, and has in service 175,000 mules, not counting mules or horses used by the artillery and the cavalry. These figures do not include the thousand and odd new railroad bridges nor the 500 and odd miles of railway track laid.

West street, New York, or rather the entire distance of the Hudson River front from the Battery to Forty-second street, is considered one of the busiest freight traffic spots in the world. There are hundreds of such West streets all along the Italian front, where millions of tons of food and freight are ever converging toward the narrow firing line. But there is never any confusion. The railroads, of course, have to bear the brunt of the transportation job. They must handle not only lifeless freight, but run passenger and troop trains without number. There is a great distributing center whence trains branch out to Brescia, to Vicenza, to Padua, to Treviso, on up toward Venice, and the Isonzo front. These trains operate under the handicap of too few tracks, too few cars, of depreciating rolling stock, and other conditions peculiar to other countries at war. During the past winter these weaknesses became evident through the unusual number of accidents, but since that time passenger schedules have been lengthened, and other steps taken, with the result that no serious accidents have been reported since March.

When, however, these West streets of the front are reached, it is a positive delight to the transportation man to watch the way the job is handled, to see in operation the vital spirit of order that was first brought into the western world on a large scale by the Romans. The distributing depots are not uselessly blocked with freight, or with freight cars waiting to be unloaded, as happened and is still happening in France, and especially in that part which is occupied by the British forces. On only one occasion did I see an idle train of cars at the front. It was piled with barbed wire.

It is even curious how little freight there is to be found about any railway station in the war zone. It seems to disappear as if by magic as soon as it arrives. It is piled upon trucks, buses, wagons or carts, bundled off as at the wave of a wand, and is soon put where it can be of immediate use or held in reserve storehouses. These road vehicles work night and day—often they can work only in darkness to keep hid and be safe from the enemy artillery that sweeps any well used road within four miles of the front line. But there is no West street jumble made of the business. Certain roads are mapped out for these countless lines of vehicles to take as they move forward and certain others for them to use as they return empty, and woe to the driver who violates his route, or who takes the middle of the road when but half of it belongs to him.

This orderly manner of working, the supreme quality and attribute of the human mind, goes right along, smoothly, under artillery fire. Nothing stops it.

It seems trite, if not ridiculous, to call upon history for comparisons in this war as it is conducted. The writer, after having traversed the same territory as did Hannibal and Caesar and Napoleon in their Alpine expeditions, feels it would almost belittle the wonderful work today to say that "the glory that was Rome" is again the glory of modern Italy.

Whereas the hardy armies of these audacious victors of other times moved in bodies of five, ten, twenty thousand at most and therefore swiftly hurrying over the Alps lest they freeze or starve, today the armies of Italy numbering hundreds of thousands of men to a section of territory occupy,

live, advance, retreat, and advance again through valleys and mountains five, eight, ten, eleven thousand feet high, climb to heights that would have defeated the staunchest efforts of these ancient armies to which history so proudly points. Hannibal's conquest of the Alps, in reality the passing of heights of hardly 6,000 ft. is a job that is repeated every week or two by the Italian Alpine regiments and is done in a matter-of-fact manner, as a part of routine. Napoleon's spectacular march into Russia has lived in memory because of its frightful consequences, because it meant the downfall of an imperial fabric. If undertaken today by the armies of the Alps, the job would not fail merely because of ignorance of weather conditions or of mismanagement of transportation facilities. As they moved forward they carry all the resources of a country with them, and as they go they figure out the physical difficulties ahead and leave behind permanent roads to back them up.

It used to take a year, two years to build a railroad in Italy. Now it is done overnight. If a general of a division needs to move in a certain direction, he passes along an order to the engineering corps and within a few days at most this division has its steel roadway to move upon. Industry has been intensified in a way that can but be an inspiration to future generations. Heights, distances, tunnels mean nothing to the builders, these soldiers who have so magnificently improved upon the methods of the ancients. Time after time I saw narrow gage roads in preparation as I passed a certain route and, if by chance, I returned that way as soon as the next day the whole was finished and the little engines were doing their work as if they had been there forever and expected to stay until the end of time.

Every once in a while a movement of troops requires the establishment of a new front terminal. This means the building of immense new storehouses and of sidings to them from the main line. To quote the official figures that 10,000 military houses have been built means nothing. One must see them to understand. They are laid out on some bit of level land like a city. Long rows of houses spring up overnight, perfectly equipped to withstand a dozen winters. This genius for solid building of the Italians does not stop with mere solidity. They go further and decorate their work with delightful bits of marble or concrete frescoes, with splendid columns standing in pretty rows outside the prosaic storehouse city.

To the man looking at the work of the front from a transportation point of view, it is at first disheartening to see mile upon mile of beautifully built track idle, without a wheel turning, with its rails rusting, with artillery planting scattering shots along it, splitting ties, digging holes in the roadbed, shattering the neat railroad stations here and there. But one soon gets used to it, for the army engineers explain how readily the whole can be put in perfect order again, with this same dazzling rapidity that makes it possible to build entirely new lines. Indeed, time and time again they finish a road, build fine new bridges for it, and then have to see their work immediately destroyed by the fortunes of the war.

Such roadbeds and depots have been put to curious uses during the war. Now they are used as defensive breastworks by one army or the other, their pretty depots figuring as division headquarters, now for the Austrian generals, then for the Italians, according as the battle line shifts.

In one such way station along the Isonzo river, the writer took shelter one afternoon from a driving mountain storm. As the village about was a heap of ruined homes, he thought it deserted. It was occupied by a division general whose time was hanging heavy on his hands, the weather preventing operations in the trenches on the mountain above the station. After a pleasant hour's talk, the storm slackened and I asked leave to be going up the side of the other mountain. "You know the Austrian artillery has been fairly

busy today, and it may occur to some fool officer to drop a few shells on this building."

"I wouldn't worry about that," said the general, "I have been here for weeks and they haven't bothered me yet. They probably hope to come this way some time and already have an eye on this place as shelter."

But I went on just the same. Hardly had I got two hundred yards away before a few desultory shells began to fall, tearing jagged, black holes in the sodden earth along my path. All the way up the mountain side I looked back now and then and watched the progress of the artillery fire. Sure enough, it was as the general had predicted. The Austrians, for some curious reason, were leaving the little depot untouched, its sidetracks and the roadbed that swung down the river side and disappeared in a tunnel cutting a gorge a couple of miles below.

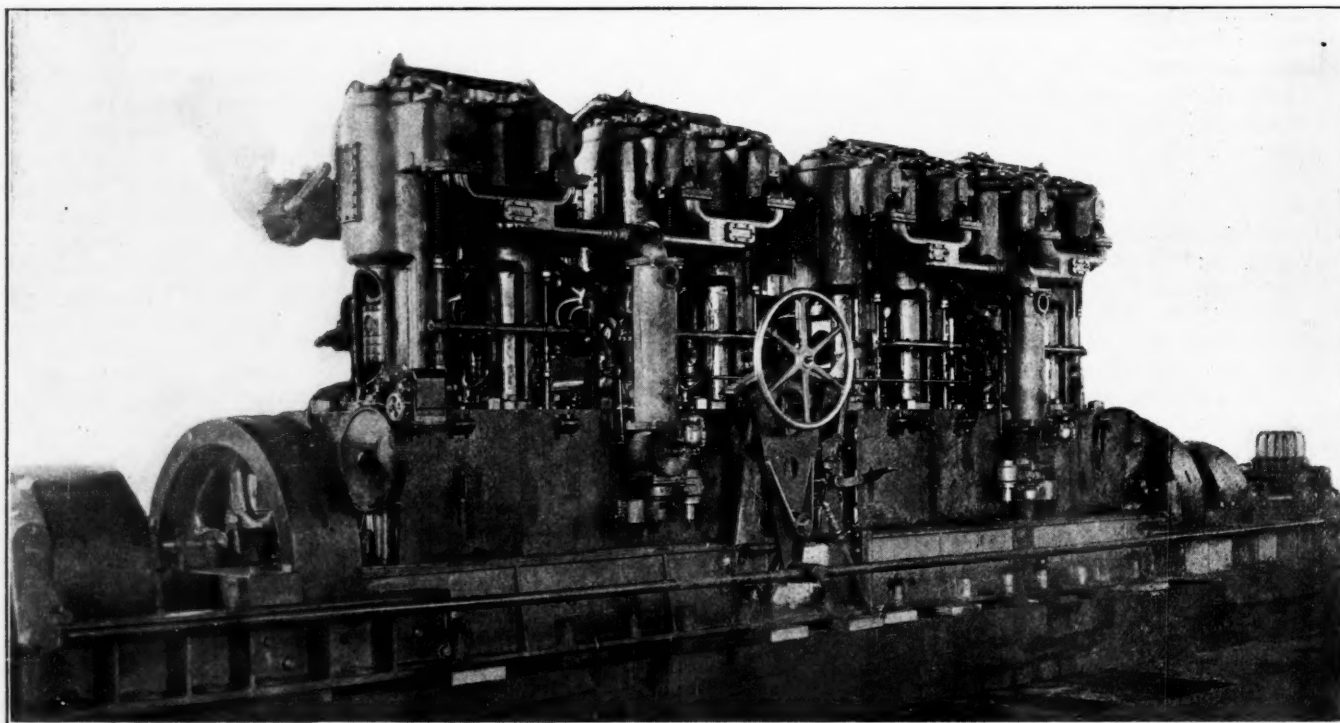
Despite all the reckless ruin and heartbreaking waste that takes place on the battle front, the secret of the success of this transportation system is detail. By grace of this system that brought home the lost camera and field glasses, marvels without end are accomplished. By grace of this system a letter posted in Rome on a given day is delivered, along with a couple of millions of others, at the front the second day therefrom. On the third day at the latest this letter will find its way from mail car to pack mule and reach the utmost, topmost trench line of this 400-mile front

freighted by rail, by rock road, by the cable railway known as the teleferica upon the mountains—all to the end that ruin may be wrought. It is hard to realize that the end and object and purpose of this system is ruin, and one does not realize it until he sees the system delivering thousands of troops at some weak point in the battle line where the enemy is breaking through, until he sees the returning trains loaded down with civilian refugees, with women and children fleeing in the dreadful night.

Some day monuments will be raised to the transportation geniuses of this war.

GASOLENE-DRIVEN CAR FERRY

The Oakland, Antioch & Eastern operates between Oakland and Sacramento, Cal., with boat connections from San Francisco, running a total of seven electric trains daily each way. Five of the trains connect at the M street bridge in the outskirts of Sacramento with trains of the Northern Electric Railway running to Chico. Three trains each way carry parlor observation cars, and on one of these trains the parlor observation car is hauled through between Chico and Oakland so that no change of cars at Sacramento is necessary. The system also has two seven-mile branches, one to Antioch and the other to Danville, making a total of approximately 150 miles, which is protected by block signals throughout.



The Gasolene Engine Used on the Car Ferry

that slopes from the 11,000 foot height of Stelvio, the three confines point of Switzerland, Italy and Austria, down the Alpine ranges to the foothills, on to the flat lands that are stopped by the Adriatic Sea. Likewise, the delivery is as prompt from the battle end. I received at Rome on the third day of posting from a military acquaintance, since dead and buried in his mountains, a letter written on the Adamello glacier of the high Alps, a letter that had come across the glacier, a quarterday's journey down the mountain by burro to train.

By grace of this system pine planks from Georgia reach the lower Alps, are then carried on a man's back dozens of miles up the mountain so that they may there be built into the shelter shacks. In the same manner big cannon are

To avoid the necessity of making passengers change cars in order to cross Suisun bay the railway transports its trains across the bay from Bay Point to Chipps Island. It is planned to have a bridge 10,000 ft. long and 70 ft. high span this bay, but while the structure is being built the railway ferries its trains across by means of the gasolene-engine-driven car ferry shown in the photograph. This is the only electric railway in the United States that ferries its cars with passengers aboard, in order to make change of cars en route unnecessary.

The car ferry is named the Ramon and was designed and built by the Oakland, Antioch & Eastern. It is constructed entirely of steel, is 185 ft. long, and weighs 590 gross tons. It is driven by a 600-horsepower, eight-cylinder gasolene en-

gine of the electric ignition type, built by the Union Gas Engine Company, San Francisco, and has sufficient capacity to carry six loaded passenger cars or eight freight cars. The engine is of unusually massive construction, weighing approximately 120,000 lb.

The method of propelling the boat is rather unusual for a motor-driven craft. The engine is set amidships and is coupled to a propeller at each end through friction clutches. As the two propellers are of opposite pitch the direction of the boat is controlled by engaging either one clutch or the other, thus eliminating all necessity for reverse gears or making the motor directly reversible. This is said to be the largest gasolene engine built.

A noticeable feature of the boat is the absence of curved plates and the adoption of a box-like design with ends that are extremely flat in order to present a large area of displacement to overcome tipping while loading or unloading cars.

There are three tracks on the main deck, each 220 ft. long, having a total capacity of nine cars. As will be seen from

arbitrate, and if the controversy should threaten to interrupt the business of employers and employees to the detriment of the public interest, the Commission should be authorized to request the two parties to consent to the creation of a Board of Mediation and Investigation. If the consent of the parties to the controversy is secured, the Commission shall form such a board. Of the three members of the board, one shall be selected by the employers, one by the employees, and a third on the recommendation of the members so chosen. If either side fails to recommend a member, he should be appointed by the Commission. If after a stated time the third member is not recommended, the Commission should select him. Appointments to boards of mediation and investigation shall be made by the Commission from a list prepared for this purpose by the Advisory Board. The Board of Mediation and Investigation should offer its friendly offices in bringing about a settlement of the dispute through mediation. If mediation should not be successful, and if the parties to the controversy refuse to arbitrate, this board should have power to make an investigation of the controversy and should



Car Ferry of the Oakland, Antioch & Eastern, Propelled by a Gasolene Engine

the illustration of the ferry, there is an overhead catenary construction so that the trains are able to run off the boat under their own power.

To meet the demand of the heavy passenger traffic the Oakland, Antioch & Eastern employs single cars, multiple unit trains, and trains hauled by high-speed electric locomotives. All the electrical equipment was furnished by the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

A SUGGESTION FOR ARBITRATION

WASHINGTON, August 23.

Among the countless suggestions for arbitration in the present and for future disputes between the carriers and their employees, one which comes from the defunct Federal Commission on Industrial Relations is interesting to recall at this time.

The essentials of the plan proposed by the Industrial Commission are those of the Canadian Industrial Disputes Act. The plan proposes the establishment of a National Mediation Commission, whose functions, while they would not be confined wholly to the railroad field, would nevertheless operate largely in that field. The scheme provides that mediation and arbitration shall be attempted, as the present laws allow, and that, in the event of the failure of mediation and arbitration, for the placing of the controversy before a Board of Mediation and Investigation. As the Industrial Commission defined them, these would be the powers of such a board:

"If the parties to the controversy cannot be induced to

be required to submit to the Commission a full report thereon, including recommendations for its settlement. The Commission should be empowered to give this report and recommendations adequate publicity."

The Board or Boards of Mediation and Investigation thus described are to be subsidiary to the National Mediation Commission, which is to be appointed by the President, by and with the consent of the Senate, and representing in proper balance, the interest of employers, employees and the public. Next in rank to the Commission, according to this plan, stands the Advisory Board, referred to above. This board is to be a representative body, its membership coming from leading organizations of employers and employees designated for that purpose by the President of the United States, the individuals, however, being appointed by the organizations which they represent. The duty of this board is to give advice regarding the duties of the Commission, including the administration of its affairs and the selection of mediators. It is to be empowered, further, to make recommendations regarding legislation, and to prepare lists of persons who may be called upon to serve on boards of arbitration and mediation.

"It is considered desirable," declares the report of the Industrial Commission, to which the name of A. B. Garetson was signed, "for the present to provide for the existence of the two commissions"—the Newlands Act Board and the proposed new board—"at least until the proposed commission has been thoroughly tested. It is believed to be wise, however, to provide for their close co-operation from the very beginning, with the idea that they will ultimately be consolidated."

BUILDING A LINE TO THE PUBLIC*

By Anderson Pace,

Manager, Bureau of Railway Publicity of Illinois

That a gap between the railways and the public exists today needs no admission. That a line to the public can be built is equally certain. Let me emphasize my belief that the railways, and *not* the public, must build that line.

There are railway men who deny the existence of the gap. Perhaps they have not asked help for the railroads from the public when the interests of the latter were *not* visibly at stake. Many trades associations in my own state, though linked by common interest with the railroads, have often refused co-operation because of the animosity members of those associations have against the carriers. Other groups refuse to co-operate because "your kind of team-work always means for us to help you get increased rates, or relief from legislation."

I don't mean to say that the gap is always caused by the railways' unwillingness to see the other fellow's side; that is only part of the trouble. Misunderstanding has to bear part of the responsibility, but misunderstandings would diminish if more railroad men would talk face to face with the railway critic. Some railway men, while admitting the existence of the gap, get away from it by ignoring those pleas of the public, which, when ignored, simply make the gap wider. Those men object to advertisements, saying, "What's the use of stirring things up?" My answer to such men is this: "If there is something to be stirred up, it existed before the stirring began. If the demands of the public are unjust, it is better frankly to explain why they can't be granted. If they are just, the railroads will save in the long run by granting them at once." Which is safer, to let the public mull over its fancied grievances in silence, or to give these grievances a hearing? If the demand is foolish, the mere exposure of it often wipes it out, but, if the demand is just, postponement merely keeps the railroad from ever capitalizing the concession in terms of good will.

If you compel a man by law to do a thing that he should do of his own free will, do you give him much credit for the doing of it? If the public forces concessions through its organized strength, does it pay back the railroad in greater co-operation or good will for concessions which were given because resistance to them was out of the question?

On January 1, 1916, I was instructed by the presidents of the railways operating in Illinois to organize a "Bureau" which would seek to develop a better understanding among the railroads of what the public wants and thinks; a better understanding by the public of railroad needs and problems; and hearty co-operation between the railroads and the people they serve. Figuratively, our job was to build a line to the public.

The first move we made was to start surveying the field we were to work in. We tried to get at the motives that underlie the actions and thoughts of the railways' public. We tried to find out not only what people thought of the railroads, but the reasons behind the thoughts. Only in that way could we learn how to make the plans that would remove the obstacles that prevent team-work today.

The American citizen is an individualist. His attitude towards the railroads depends largely upon the treatment he has received at the hands of the railway employees; upon the cartoons, news and editorials he sees in his paper; on his inability to see why his town cannot have finer stations or lower rates than competitive towns. To try to argue with him on any of these subjects is simply to breed more trouble. If he and the railroads knew each other better, explanations and arguments would get farther with him. Unfortunately,

he does not understand railway operation, management, finance or regulation. He has never been taught to look upon railroads as he would other business, and so his views and judgment of railroads are biased.

All of these things form parts of the problem the Bureau of Railway Publicity of Illinois is attacking. As a representative of the railways of the State of Illinois, we are locating our friends and cementing them to us. We are getting acquainted with the neutrals as a first step in making friends of them. We are discovering enemies and trying to remove the causes of their enmity.

We are running advertisements in order to show the public that the railways are not autocrats, always ignoring the public; to seek out overlooked causes of trouble; to get away from the old begging attitude; to win the sympathy of the employees; to put the public in a boosting frame of mind; and to put a premium on courtesy and good service.

We are building mailing lists of farmers, bankers, retailers, school teachers, manufacturers, clubs, associations, laboring men and railway employees, for the purpose of following all these people up through the mails. Our representatives parallel this work by calling on our correspondents, thereby making us seem more than a name to the man we want to influence. We have representatives at conventions and gatherings of newspaper men, manufacturers, retailers, tradesmen, club women and miscellaneous people, co-operating with them in their work, hearing about their troubles, telling our story, and making friends.

Speakers are placed upon programs, and before granges, farmers' institutes, town meetings and gatherings like those cited before, we are telling the story of the interdependence of farmers, manufacturers, distributors, consumers and the railways. In the case of all associated groups, friends are made of the officers and directors.

If co-operation between the railways and any group is impossible because of some difficulty, we draw up a bill of particulars for discussion by a committee of broad-minded men chosen from both sides. The resulting settlement usually improves the relations and leaves both sides on a common ground of undertaking and friendship.

Whenever a chance for service comes along we seize it. For example, the Department of Foreign and Domestic Commerce has not funds enough to send its confidential bulletins to Illinois manufacturers, so we enclose them in our regular letters to the manufacturers of the state, thereby rendering a service which improves relations.

We try to help local commercial clubs in their civic and industrial development work. This is paralleled with periodical district meetings with secretaries and officers of these associations. Whenever possible, we try to get a local railway man into a position of influence on the associations' rolls, so that the work done may not be interrupted and its effect destroyed. Also by co-operating in local affairs such a man improves the standing of his own road. He is likewise in position to be helpful when controversies and misunderstandings arise.

By far the most important part of our work is being done through and with the attorneys, surgeons, agents, traveling representatives, train masters and superintendents of the railways of Illinois. Although we report directly to the presidents, much of our work is being done with the advice of the superintendents. For this reason, when one of our men is in the field, his first stop in any district is usually the office of the local division superintendent.

The agents hold the key to the local situation. They can make or break a railroad in a town. We have built a list of agents (approved by the superintendents) and have started to improve the position of the local agent in his home town; to develop real friendship between him and us; to work out a small but systematic plan of missionary work for him to use

*Abstract of an address delivered before the American Society of Railroad Superintendents, Memphis, Tenn., August 16, 1916.

in his home town; to get him credit for the work he does for us; and to build around him a local committee of friendly active non-railroad men. We meet with this committee periodically, co-operate all the time, and now are developing those parts of our own campaign which the committee can dovetail into.

We are far from finding our way through the woods, but we believe that there is one tool which could do more than all the rest. That tool is the organized employee. Get him on the side of the railroads, let him be our missionary, and the conversion of the public is over.

THE CHICAGO ZONE VALUATION COMMITTEE

Of the railroads that participate in the support of the President's Conference committee on the Federal Valuation of the Railroads, 24 enter and use the Chicago terminals, and these 24 have organized what is known as the Chicago Zone committee, which is serving as an auxiliary to the national organization. The local committee is carrying on work of an allied character in connection with the Federal valuation of railway properties within the limits of the Chicago terminals. This organization has been created because of a realization on the part of the officers of these roads of the extremely complex and highly specialized character of the problems to be encountered in the inventory of the properties within the terminal limits.

The magnitude of the railway plant in Chicago was brought out in the report of the Chicago Association of Commerce on smoke abatement and electrification, which was abstracted in the *Railway Age Gazette* of December 10, 1915, page 1089. The district under consideration in that report comprised 3,576.4 miles of track, of which 1,079 has been elevated to eliminate grade crossings with the streets. There are 362 grade crossings between railroad tracks, while at 113 crossings the grades have been separated in connection with the track elevation work. There are 131 interlocking plants; 65 engine houses, containing a total of 1,129 stalls; 125 shop buildings; 51 coaling stations and 93 water stations. This extensive property is interlaced into a fabric of such intricacy that the map of the Chicago terminals presents the most remarkable network of railroads to be found anywhere in the world. This has been the result of years of gradual growth, not only as to the original construction, but also as to the extensive reconstruction necessitated by the grade separation work, which has been in progress for the last 24 years.

The object of the Chicago Zone committee is to make an exhaustive and co-operative study of the local problems. Not only does the very nature of the railway network demand its consideration as a whole, but the physical conditions at Chicago are so nearly uniform throughout the entire area that a great deal of data can be compiled co-operatively that will be of value in the consideration of any individual property. The primary object is a study of the construction costs, particularly in view of the fact that it is the opinion of many that the data collected by the Interstate Commerce Commission, division of valuation, in accordance with its order No. 14 (pertaining to the prices paid for materials and the rates of compensation paid to labor), are entirely inadequate and will bring about misleading results. Another problem of formidable proportions is the determination of the construction periods and other construction arrangements to be assumed in evolving the reproduction costs.

The committee seeks to attain the fullest possible co-operation with the government organization on these and other matters concerning the valuation work. Thus far the government engineers have taken the position that the work done up to the present time in Chicago has been of such a tentative or experimental nature as to preclude the expression of any definite policy. Up to the present, inventories are being

taken only of the property of the Chicago, Rock Island & Pacific and the New York Central. The valuation section on the Rock Island extends from the La Salle street Station to Rockdale, Ill. The conduct of the work in this case is different from the usual practice, in that the railway company furnishes the field party which is accompanied only by an inspector to represent the government. The government engineers have not announced whether this method is to be used on the other work in the Chicago terminals.

The Chicago Zone committee consists of one representative from each of the 24 participating railroads, many of whom devote practically all of their time to the committee work. A. W. Newton, assistant to the president, Chicago, Burlington & Quincy, is chairman of the committee, and Robert H. Ford, engineer of track elevation, Chicago, Rock Island & Pacific, is secretary. The committee meets once each month, but a large part of the work is done by sub-committees, which meet oftener, and by the individual members. The territory to be included in the Chicago zone has not yet been clearly defined. It is the intention to make this conform to the limits of the terminal valuation sections for each road, but these have not yet been determined by the government. For the purpose of outlining the work the zone has been taken tentatively as including all of the territory encompassed by the line of the Elgin, Joliet & Eastern, or, in other words, all of the area enclosed in an arc having a radius of from 40 to 50 miles from the business center of Chicago.

Thus far the committee has devoted its time largely to the problem of a determination of weighted average unit costs for materials and quantities entering into railroad construction for each of the past five years and for the full five year period. With these unit costs there are to be prepared statements of the wages, the unit costs of materials, the costs of equipment and the overhead charges, which were used in the compilation of the weighted average unit costs, so that the results may be supported or readily adjusted to conform to changes in wages, material costs, differences in local conditions, etc.

For the purpose of carrying on this work the committee has been divided into sub-committees, which were assigned individual branches of this problem, as indicated by the subjects of labor, concrete, metallic bridges and metallic structures, grading, ballast, track laying and surfacing, buildings and train service.

The committee on labor is to tabulate the information reported by the member roads in accordance with the Federal valuation order No. 14, for the purpose of comparison with additional information to be gathered in greater detail. This will cover the rates paid for construction and maintenance work during the last five years. It will also involve a comparison of rates between union and non-union labor and of the rates paid by contractors, street railways and industrial concerns. Data will also be collected concerning the amounts, sources and classes of the available labor and the comparative efficiency of these various classes.

The committee on concrete will investigate and report on the costs of all elements entering into the construction of the masonry structures built by railroads. This will include the excavation and back filling, as well as all work done in connection with the foundations. Similar information is to be obtained concerning structures built for the local public authorities.

In the case of grading, which is concerned almost entirely with the embankments required for track elevation purposes, the committee will be concerned largely with the sources of supply of materials, the transportation and the extra cost of delivery due to the operating interference always experienced under the heavy traffic conditions obtaining in the Chicago terminals.

The ballast committee will investigate the source of supply and manufacture of all the classes of ballast now existing in

the railroads of the Chicago zone. Special attention is to be given to the item of waste. The cost of the ballast will be in terms of materials actually delivered to the track. In the case of the committee on track laying and surfacing, the cost of installing the different kinds of special work, such as turnouts, crossings, slip switches, etc., form an important part of the work.

The first work of all the sub-committees has been the study of the forms or blanks upon which the railroads will be requested to tabulate the cost data desired. This is one of the most difficult parts of the work, as it involves not only the question of the detail in which it is desired to compile the information, but also the character of the data which the railroads have available for tabulation on such forms. In many cases the cost records of work done during the period in question have not been kept in the detail that is desired. In practice, the sub-committees work out these forms to their own satisfaction and then submit them to the secretary of the general committee, who in turn re-submits them to the general committee for study and discussion at the general meetings. Realizing the importance of this work, thoroughness has been the keynote. The work is being done carefully and involves a large amount of detail. It will not be finished for some time, but the results ought to justify the time and money required.

ABANDONED PROPERTY

The general secretary of the Presidents' Conference Committee on the Federal Valuation of the Railroads, has issued a circular on the subject of abandoned property. As outlined in valuation order No. 10, the carriers are required to file with the Commission detailed schedules of all abandoned property, which schedules are to be used by the Commission in identifying the property through its field parties. After a careful consideration of the orders of the Commission and a conference with the director, the Presidents' Conference Committee makes the following suggestions:

It is clear that property which has been gradually consumed in the business of the carrier and replaced in ordinary maintenance should not be included in the list of abandoned property. Property which is not now in use, but which is intended to be used in the future for the purposes of a common carrier, should not be included in the list of abandoned property, because such property is owned or used for the purposes of a common carrier and will be valued as such. The intention of the carrier is an important element in deciding what is and what is not abandoned property.

It is the desire of the Commission that each carrier shall make a complete and detailed statement of all its claims with respect to its abandoned property and the effect of such abandonment. Such statement should accompany the schedule. It is understood that the orders do not require the preparation of new maps and profiles of abandoned property.

It is important to show the total investment of the carrier (whether paid for out of capital or earnings) from the date of the inception of the enterprise to the date of valuation. Included in that investment are those amounts representing the original cost of property abandoned to the date of abandonment. Such amounts should be ascertained and claims made for their inclusion in connection with the facts required to be ascertained under the paragraph entitled "fourth" of the Valuation Act.

Fixed physical property includes all property of that kind which has been abandoned, whether or not physical evidence of the existence of such property now remains. All such fixed physical property should be listed wherever evidence of the existence of such property can be found, whether in the records of the company or elsewhere.

Where a temporary track was constructed and used until the completion of a tunnel, and where other structures were

built in aid of the construction of the railroad or to hasten its completion, even though permanently abandoned, the estimated present cost of all of the same should be included in the cost of reproduction new of the railroad, and the actual cost thereof should be included in the original cost to date of the same. However, in order to avoid the possibility of having the original cost and reproduction cost of property of this kind omitted by the Commission, each carrier is advised to include all of the same with the cost thereof to the date of abandonment in the schedule of abandoned property with its claims in reference thereto fully stated, and in such case the inclusion will not prevent allowance therefor by the Commission in original cost and cost of reproduction.

Loss resulting from the permanent abandonment for railroad purposes of right of way or other real estate should be included in the schedule, showing the original cost and the salvage value (which is its value for purposes other than those of a railroad), the difference between the two being the amount of the loss. When the title of the carrier became extinguished by the abandonment, there is, of course, no salvage, and the amount of loss is the original cost.

The following are not to be included in the schedule of abandoned property: Hidden quantities, land still owned by the carrier, structures temporarily out of service, such as interlocking and other signal towers, bunk houses, etc., salvage value of rails and other materials that may have been removed from abandoned line.

The following are to be included in the schedule of abandoned property: Land the title to which was lost through abandonment, roadbed of an abandoned line, terminal improvements which have been abandoned, bridges on an abandoned line, protection work, culverts and other structures, and the foundations and abutments of bridges on abandoned lines.

It is suggested that the carriers prepare two separate lists of abandoned property; the first list dealing with that abandoned property whose cost would properly be included in the determination of the cost of reproduction new, and as to which, therefore, the carriers should claim that the cost thereof should be included, not only in the original cost to date, but in the cost of reproduction new and reproduction less depreciation of the existing property. The second list should include all other abandoned property, and the claim with respect thereto should be that the original cost to date of abandonment of this property represents a portion of the investment of the carrier, and as such should be reported under paragraph "fourth" of the Act.

GERMAN RAILWAY WOMEN IN TROUSERS.—The director of the Prussian state railways has issued a new order to female railway employees. Women conductors and guards must in future wear the ordinary service uniform, including "dark grey wide trousers." Skirts and other articles of female attire will only be allowed when the employees are off duty and outside the railway premises. On the Berlin elevated railway, where the women guards have already worn knickerbockers for some time past, the Prussian railway administration has ordered that the women shall wear long trousers, like the railway's masculine employees.

TRAIN FERRY BETWEEN SWEDEN AND ENGLAND.—The government of Sweden has instructed the management of the Swedish State Railways to examine the question of a regular daily service by train ferries or steamers between Gothenburg and an English port. If train ferries were adopted they would have a displacement of about 11,000 tons or three and a half times that of the Trelleborg-Sassnitz train ferries, and would have to make a journey of over 500 miles. Five would be required—four for service and one for reserve—but it is said that none could be delivered either by a Swedish or a foreign shipyard before 1919.

Opportunities for the Railroad Superintendent*

Importance and Difficulties of the Position Now Greater
Than Ever Before in History of American Railroads

By C. H. Markham,
President, Illinois Central Railroad

THE office of superintendent is one of the very oldest in the railroad organization. When railways were new each independent road had a much smaller mileage than is now ordinarily included within a single division. The head of the road was then usually a representative of the financial interests that controlled it; and under him was a "manager" or "superintendent" who was really the chief executive of the property. He had direct charge of the building of new mileage. He handled the movement of trains and the maintenance of track and equipment. He solicited traffic. There were others who were directly concerned with these and various other matters of importance, but they were foremen and clerks under the superintendent rather than what we would now call officers.

As the railways grew in mileage, in volume of traffic, and in the complexity of their operations it became necessary to subdivide their mileage into divisions and districts and to subdivide their organizations into numerous branches and departments. On large roads a general superintendent has been put over the superintendent, a general manager over the general superintendents, a vice-president over the entire operating organization, a president over all departments and perhaps a chairman of the board over him. The foreman in charge of the maintenance of equipment has developed into a mechanical department, the foreman in charge of track into an engineering and maintenance of way department, the clerk who kept the books into an accounting department, and the superintendent's rate clerk into a great traffic department. In consequence of changes of this kind, the number of kinds of functions directly and regularly performed by the superintendent has been greatly reduced, while the number of officers who are superior to or co-ordinate with him has grown very large. He is no longer directly concerned on most roads with the solicitation of traffic or the keeping of accounts, and on some which are highly departmentalized he has little or nothing to do even with the maintenance of track or of equipment. His main duty on all roads, and almost his sole duty on some, is to *operate* that part of the railroad over which his jurisdiction extends.

And yet, while all this is true, it does not follow that as a result of this process of development and evolution the railroad superintendent's position has become any less important or less difficult to fill. On the contrary, the importance and difficulties of his position and work probably are greater now than they ever were before in the history of American railroads. This is due to many causes. The modern superintendent has jurisdiction over about 400 miles of line. This is more than was included in most railroads when the superintendent was the "old man." The amount of traffic handled on each mile of line has grown 150 per cent within the last twenty years. The conditions under which it must be handled have greatly altered. The only inducement the traffic department can now offer to attract competitive business is superiority of service, and the kind of service that is rendered depends very largely on the efficiency of the superintendent. The public and regulating authorities have also grown much more exacting in their demands regarding service, whether competitive or non-competitive. While the demands for better service have been

thus increasing, the railroads have been subjected to greater and greater pressure from their employees on the one hand for easier conditions of work and higher wages, all tending to increase expenses, and from the public and public authorities, on the other hand, for lower rates. When employees are given more favorable conditions of work or higher wages, or when rates are reduced, it becomes necessary to effect greater economies in some way or ways, and the duty of actually carrying out the plans and applying the methods adopted by the managements for this purpose falls with its greatest weight on the superintendent. Finally, the superintendent, as the principal officer of the railway on his division, has a great responsibility for maintaining satisfactory relations with the public, and this is a much more difficult and delicate task now than it ever was before.

While this summary expresses only in the briefest possible way a few of the changes that have taken place in the superintendent's position, in the respects that are essential characteristics of the position there has been no real change. The division superintendent is still the real operating official who is personally on the job. He is still the backbone of the railroad organization. The business of a railroad is the conveyance of persons and commodities from place to place, and the superintendent is still the officer to whom the company and the public chiefly look for the proper rendering of this service.

Because of the conditions under which railways must now be operated, the superintendent is under constant pressure to effect economies without impairing, and, indeed, while constantly improving, the service rendered. While the end to be sought is so easy to define, the means that must be used in attaining it are numerous and much more difficult to state. The greatest practicable amount of traffic must be handled with each car and locomotive on the road. At the same time, great care must be taken to move traffic promptly and to get trains over the road in reasonable time, as delays in the handling of traffic irritate shippers and consignees, and delays in the movement of trains pile up overtime.

Ordinarily, the division superintendent has jurisdiction over 400 miles of railroad, which passes through 80 villages, towns and cities. With the inspection motor car now furnished the superintendent he should be able to visit each of these cities and towns at least once every ninety days, and should become acquainted with influential citizens, as well as city officials. There should be very few disputes arise between the people in towns along the line and the railroad which cannot be settled on the ground, if the superintendent is acquainted with the people. By his settling matters in this way the railroad will gain more friends along its line.

The superintendent should become acquainted with every shipper or receiver of carload freight, and also with many of those whose patronage takes the form of less-than-carload freight, and he should in season call upon grain shippers, lumber dealers, coal operators and dealers, live stock men and other large shippers.

In order to retain the respect and loyalty of employees, all grievances or complaints from employees should be given attention immediately, and if possible should be settled on the division.

It is an unfortunate fact that there is much misunderstanding even among the leading business men and the most

*Abstract of an address delivered before the American Society of Railroad Superintendents, Memphis, Tenn., August 16, 1916.

intelligent people of this country regarding the railway situation and railway management in the United States; and a large part of the public is extremely misinformed and prejudiced. The superintendent, because of his position, his wide acquaintanceship among the people on his division, and the confidence in him he should cause them to have, is peculiarly well situated to do effective work in removing popular misconceptions regarding railway matters and in fostering a friendly sentiment toward the roads.

Now, I have referred to many things that the superintendent ought to know, ought to be and ought to do, and yet the summary of them I have given is very inadequate. The fact is that the first-class superintendent must be an all-round railroad man. He must have a broad knowledge of both the theory and the practice of railway transportation, and he must be patient, tactful, firm, forceful and a tireless worker. He is the official personification of the road to that part of the public that may be affected by the management and physical operation of his division as a component part of a system, and so far as the central administrative organization is concerned, he is the agent on the ground to see that its policies are carried out on that division and that necessary knowledge of local conditions is provided for its use. He is not a specialist who, except for adventitious circumstances, might be performing the same duties for an employer engaged in a wholly dissimilar line of business. In its general operation from day to day he is almost as much the organization itself, on his division, as in the days when the whole road was small enough so that its entire field of operation was within the convenient supervision of one man.

The superintendent's office is a hard one to fill satisfactorily, but it is in the hardest positions that there are developed the best men, and it is a well-known fact that a large part of the executive officers of our railroads came up through the superintendent's office. The Biographical Directory of Railway Officials gives sketches of the railway careers of 645 officers who have reached the rank of president, vice-president or general manager. Of this number 271, or 42 per cent, have at some time in their railway history passed through the grade of superintendent. The whole number of these executive officers whose history is given in detail includes 233 presidents, 285 vice-presidents and 127 general managers. Of these numbers 83 presidents, 94 vice-presidents and 94 general managers reached those positions through the grade of superintendent.

The large percentage of general executive officers who have obtained a part of their training as superintendents is significant, when consideration is given to the variety of lines through which attainment to the higher positions may come. Quite a number of presidents are such because of purely financial or legal relations. The ranks of vice-presidents are filled from the various departments—legal, accounting, traffic or financial, as well as from the operating department, and their administrative functions are confined to the headship of the department through which they have risen. In nearly all cases the general manager has had preliminary operating experience as a division superintendent, if the road be an important one, or as a general superintendent of a smaller line. It is apparent, then, that there are opportunities higher up for the superintendent. Special conditions may at times dictate the propriety of choosing for the leadership of a railroad corporation one who has shown conspicuous capabilities or influence in some special direction. But the line of promotion will always be open to the man who demonstrates conspicuous ability as a superintendent.

ITALIAN COLONIAL RAILWAY DEVELOPMENT.—The Italian Ministry of the Colonies has announced that the Central railway station at Benghasi is now open, and that the line from Benghasi to Er-Regana is in an operating condition.

INITIAL STRAINS IN RAILS

The Interstate Commerce Commission has issued a report on the derailment of a west bound passenger train on the Western Maryland near York Road, Pa., on January 7, 1916, which was caused by a broken rail. The derailment resulted in the injury of one employee and two passengers. The train, which consisted of six cars, was derailed with the exception of the locomotive and the rear truck of the rear sleeping car. The accident occurred on tangent track nearly 300 ft. beyond the westerly end of a one-degree curve. The track was laid with 90-lb. rail, single spiked to about 18 ties per panel and ballasted with stone.

The rail which caused the accident was an "A" rail of 90-lb. A. S. C. E. section, rolled by the Maryland Steel Company in December, 1905. It was originally laid in tangent main track in 1906. It was removed from the track in September, 1915, and relaid at the point of the accident about December 20 of the same year.

A portion of the receiving end of the rail, about 11 ft. in length, was broken into many pieces, 56 of which were recovered. The rail was examined and submitted to tests by James E. Howard, engineer-physicist of the commission. The following is an abstract of his report:

The primary cause of failure was the presence of a split head, which had reached an advanced stage of development prior to its complete fracture under this train. Secondary lines of rupture were developed at the time of derailment, the latter separating the metal of the web and the base at a considerable number of places.

The fracture of the rail occurred at its receiving end. The splice bars held the fragments at the extreme end in place, beyond which the fracture of the rail was complete. The section fractured was 11 ft. long, of which 8 ft. showed the presence of a seam in the head. The shape of the fragments, in cross section, indicated that the origin of the split was in the upper part of the head, a short distance below the running surface. Individual fragments indicated that the split had been a progressive one, extending downward toward the web, and traveling lengthwise the rail from some definite although unidentified starting point.

A polished and etched cross section of the rail displayed markings characteristic of seamy steel. Such seaminess is recognized as a common cause, leading to incipient separation of the metal, and eventually resulting in split heads and certain base fractures. Interior seams, as well as surface defects, are of more serious import in hard steels than in mild grades of metal. The conditions of service have much to do in defining what constitutes a serious defect in the metal, the need of structural soundness increasing as the stresses in the rails increase in magnitude and in the number of times the loads are repeated. The relations between structural defects and the grade of steel increase in importance as harder steels are used.

As it is supposed that the period in the process of steel making during which streaks have their origin is confined to the ingot, their elimination, partial or complete, is a metallurgical problem. Whatever difficulties interpose, streaks of this kind should not find their way into finished rails in greater degree than the state of the art renders unavoidable.

Rails in the track in which split heads are in process of development admit of recognition only at a late period. A general increase in the width of the head is one of the indications of a split head. The width of opening of an interior seam is closely represented by the gain in width of the head. The depth of the seam is many times its width. The head may be far advanced toward separation when its increase in width is first noticed. The formation of a fin along the edge of the head, from the lateral flow of the metal at the immediate surface, will not be mistaken for evidence of a

split head, the general width of the head remaining unchanged. Other indications of split-head fractures consist of a slight depression along the middle of the top of the head, or the presence of a dark streak at that place, also local sags in the head, as seen from the side of the rail.

On the rail which fractured there was a dark streak along the middle of the running surface about 0.60 in. in width. The general increase in the width of the head was 0.13 in. Unruptured metal, about 1-16 in. in depth, between the running surface and the seam appeared to have existed prior to the time of derailment.

In the investigation of rail failures it is essential to inquire into conditions associated with those which have led to specific failures. During the present examination supplementary data were acquired upon the state of internal strains and stresses which affect rails and which must be taken into consideration in judging of the total stresses which rails are being called upon to endure while in the track. These initial strains, markedly pronounced in steel in the form of rails under current methods of fabrication, are to all appearances just as real as the direct strains which attend the passage of a locomotive over the rails. The total stress in the steel is the sum of these strains which include the cooling strains of fabrication, the cold rolling strains in the head resulting from successive wheel pressures on the running surface, and the direct bending loads which are present when the locomotive and train are supported by the rail. The magnitude of the stress is the algebraic sum of these several components, since the direct loads of the equipment cause reversed stresses of tension and compression, according to the position of the wheels, with reference to any given place on the rail.

The state of the initial strains in the present rail was ascertained, in a section taken from the receiving end just beyond the last fracture made at the time of the derailment, also in a section from the leaning end of the rail, each section being examined in the condition it was left by the derailment. A duplicate section was taken from the receiving end, which was annealed before its examination. In addition, pieces of new rails were examined for the purpose of ascertaining the primitive strains acquired during fabrication, those resulting from accelerated and from retarded rates of cooling, the residual strains after annealing, also measuring the modified strains in sections which had been gagged. A few observations were made, illustrating the manner in which exposure of the base of the rail to heat affects the head, the expansion of the base by rapid heating, momentarily causing contraction of the upper elements of the head.

Referring to the rail which caused the present derailment, there was a maximum stress of compression of 11,100 lb. per sq. in. at the top of the head. The sides of the head and the web were each in a state of compression. The edges of the flanges were in a state of tension, an unusual circumstance which requires explanation, since the flanges are also expected to be in compression when normal cooling strains of fabrication alone are present.

At the time of derailment the receiving end of this rail was subjected to bending stresses of unusual degree. Pieces were broken off in succession by the hammering of the wheels of the train after an opening had been made in the track. In consequence of this the overhanging end was bent downward, overstraining the rail and resulting in the reversal of the strains in the flanges from a primitive state of compression to a final state of tension.

The stresses which were present in the section taken from the leaving end of the rail were more nearly normal to rails which have been exposed only to usual track conditions. It is believed, however, that this portion of the rail was subjected to an unusual load at the time of derailment, but of lesser degree than the receiving end. The third section from the fractured rail was annealed. The initial strains through-

out were of moderate degree, showing a decided reduction below those witnessed in the other two sections and below those generally in rails of similar dimensions and weight. The effect of annealing is to efface initial strains, the magnitude of the primitive strains and the annealing temperatures being factors which influence the results.

Observations were continued upon a series of seven sections of 85-lb. rails, of the type known as the Dudley section, having rather thin flanges. New rails were used in which the strains were measured due to cooling under normal conditions, those resulting from an accelerated rate of cooling, and those from a retarded rate of cooling, also strains which remained in the rail after annealing and the strains as they were modified by the operation of gagging.

The section which represented the normal rate of cooling was taken from the end of a rail which cooled in the usual manner on the hot bed of the rail mill. The section of accelerated rate of cooling was cooled rapidly by a blast of air directed upon it by a hose, the air being applied immediately after the section came from the hot saw, and continued until the section was cool enough to handle. The section of retarded rate of cooling was buried in dry ashes, in company with two other sections, each taken immediately after hot sawing. The two additional sections were placed in the ashes in order that the increased volume of metal might aid in accomplishing a slow rate of cooling.

The gagged sections were taken from a rail which cooled normally on the hot bed.

Under the normal rate of cooling the stresses of compression in the flanges were found to be 16,800 and 18,300 lb. per sq. in., respectively, with a tensile stress of 4,800 lb. in the elements along the middle of the width of the base. Lower stresses prevailed in the head, the maximum compression there being 6,900 lb. per sq. in. The thinner metal of the flanges, permitting a more rapid rate of cooling, accounts for the difference in the initial strains in the head and the base. The total range in stresses in the base, those of tension plus those of compression, was 23,100 lb. per sq. in.

Under the conditions of accelerated cooling the initial strains were much increased, particularly in the thinner parts of the web and the base. The maximum compression in the flanges rose to 33,300 lb. per sq. in., with tension along the middle of the base of 19,200 lb. per sq. in. The total range in stresses in the base was therefore 52,500 lb. per sq. in. The metal at the middle of the web showed a compressive stress of 11,400 lb. Less pronounced effects were found in the metal of the head, each gaged length of which, however, showed higher results than in the normally cooled section.

The section of retarded rate of cooling showed moderate initial stresses along each of the elements examined, which did not materially differ in magnitude from those of the annealed section. The results upon this section furnish data concerning the period in the fabrication of the rail when the initial strains are acquired. It appears that initial strains are chiefly acquired during the period of cooling, succeeding the last pass in the rail mill. The reductions in the rolls, occurring at a time when the metal is plastic, do not appear accountable for the final strains which are in the rails. The difference in the rate of cooling of the thick and thin sections of the rail chiefly influences the results. Sections having thin flanges may be expected to display greater initial strains than those with heavier bases.

Steel is susceptible of acquiring initial strains by rapid cooling from higher temperatures, which slow cooling ameliorates. A state of complete repose, in which initial strains are entirely absent, is not practical to reach in rolled and forged shapes. The shape of a steel rail is one that readily acquires internal strains, which weight and dimensions of section modify.

With reference to the effects of gagging, initial strains of

tension or of compression may be introduced at will on one side or the other of a bar, according to the direction of the bending load. It follows that a modification of the initial strains in a rail may be effected in a similar manner by cold bending. The strains introduced during cooling admit of being disturbed and even reversed by gagging. The gagged sections were found to have strains present of diminished magnitude over those in the section of the rail which cooled normally. The operation of gagging, in so far as it related to these sections, was therefore an ameliorating process rather than one which increased the intensity of the strains in the surface metal of the rail.

Strains may be at least partially eliminated by annealing, effacing in part those which had been acquired, and also by slow cooling from the temperature of rolling they may in part be prevented from forming. While the steel is in its plastic state at rolling temperatures initial strains of substantial amount can hardly exist. The capacity for retaining initial strains is apparently controlled by the elastic limit of the steel. If the metal is allowed to cool after any of the passes in the blooming or rail mill it would then acquire initial strains. These earlier shapes have displayed initial strains when cold, but of lesser degree than witnessed in the finished rails.

A distinction must be made between the amount of extension or compression which may be given the rail by the process of gagging and the initial strains which result therefrom.

The capacity for initial strains is necessarily limited to the elastic limit of the metal—that is, the initial strains in an ordinary rail can hardly be greater than represented by two-thousandths of its length, the strain corresponding to an assumed elastic limit of 60,000 lb. per sq. in., whereas the total extension or compression from gagging may be any reasonable amount—several times the amount of the initial strain which results therefrom. In respect to the amount of extension or compression given the rail, gagging is not the same as peining the surface, nor the same as the cold rolling effects of wheel pressures; each have their own characteristics.

The normal stresses which affect rails—that is, the direct bending stresses from wheel loads—cause unit stresses considerably higher than engineering practice prescribes for use in permanent structures, and to these direct stresses the initial strains must be added to show the total strains and stresses in the rails. Initial strains have not generally been given due consideration. They have not even been measured in many instances. The present determinations and those of earlier reports show the initial strains to be of magnitude approaching or even exceeding at times the direct bending stresses of the train loads.

In both of the gagged rails the permanent sets in the head were greater than those of the base. This result occurred regardless of whether the sets were of extension or compression.

The longitudinal effects of gagging are greatest in the outside fibers of the rail. The interior fibers are strained in a lesser degree than those at the top of the head, or along the lower surface of the base. While any straining beyond the elastic limit of the steel may be considered as having a detrimental tendency, and if long continued would eventually end in rupture, nevertheless the overstraining of rails for the purpose of straightening them, by loads once applied, and of a magnitude causing permanent extension amounting to only one-tenth of 1 per cent, should not seriously affect a grade of steel which is suitable for rails. In a crosswise direction the effect of the plunger of the gagging press, according to the testimony of those in position to make frequent observations, does not cause material visible deformation.

A general summary of the results of the measured strains

which were found in the several sections is shown in Table No. 1:

TABLE NO. 1—INITIAL STRAINS IN STEEL RAILS
(Stresses in pounds per square inch, corresponding to measured strains. Compressive stresses in ordinary-faced type. Tensile stresses in heavy-faced type.)

Description	Head			Base			
	Side	Top	Side	Web	Flange	Middle of width	Flange
90-lb. rail, Western Maryland:							
Fractured end	7,200	11,100	6,900	2,700	2,100	3,900	2,400
Leaving end	3,300	15,600	1,500	600	15,600	6,900	8,700
Fractured end, annealed..	1,500	3,300	1,200	900	900	300	3,300
85-lb. rail, new:							
Normal cooling	4,500	6,900	5,100	1,800	16,800	4,800	18,300
Accelerated cooling	8,400	7,200	8,100	11,400	33,300	19,200	31,800
Retarded cooling	3,300	1,500	2,100	1,800	300	3,600	300
Annealed	1,500	3,900	1,200	600	2,400	4,200	1,200
Gagged on head.....	5,700	3,600	5,400	600	9,900	1,200	9,600
Gagged on base.....	3,000	6,900	3,600	10,500	8,400	3,600	6,000
Gagged on base, then on head	8,400	6,000	8,400	4,800	1,200	1,200

EFFICIENCY TESTS ON THE PENNSYLVANIA PART II

The function of an inspector of train service is to see and note any and every feature of train work which may come within the range of his observation; and, if he is to make himself of the utmost usefulness to his superior he will, of course, make note of all operations, regardless of their magnitude, and will never decide that a given act or course of action should go unnoticed because it is small. This is the explanation of the "miscellaneous" list given herewith. The article published last week gave the lists of the more formal efficiency tests; and, with the table now given, the reader has the whole program, the formal and the informal. Following the list are two sketches prepared by two of the men who perform inspection service on the Schuylkill division:

MISCELLANEOUS EFFICIENCY OBSERVATIONS; PENNSYLVANIA RAILROAD, SCHUYLKILL DIVISION

1. Use of intoxicants.
2. Use of tobacco.
3. Conduct of newsboys, etc., on trains.
4. Use of reliable watches.
5. Proper use of engine bell.
6. Placing torpedoes where persons are not liable to be injured.
7. Inferior trains properly clearing superior trains.
8. Movement through sidings used by trains in both directions.
9. Trains using caution in passing trains receiving or discharging passengers.
10. Heat, light and ventilation of passenger cars.
11. Fire protection.
12. Lights in block stations properly shaded.
13. Unauthorized persons in block stations.
14. Trains stopping and ascertaining condition of block ahead for which there is no block signal, unless proper signal be given by signalman.
15. Reporting clear of block between block stations.
16. When stopped by block signal, conductor and engine-man immediately ascertaining cause.
17. Operation of levers and appliances by authorized persons only.
18. Signal levers in normal position.
19. Aisles in passenger cars free from hand baggage.
20. Employees reporting for duty on time.
21. Clocks adjusted to show correct time.
22. Train employees making station and train announcements.
23. Proper percentage of cars with operative air brakes in trains.
24. Adherence to regulations as to eye glasses.

25. Train employees taking proper precaution to prevent personal injury.
26. Hand brakes set on cars left standing.
27. Cutting loose from train when taking coal and water.
28. Baggage agents noting condition of baggage.
29. Brakemen in proper position.
30. Sanitary conditions.
31. Yards in clean condition and free from obstacles.
32. Bridge guards in proper positions.
33. Baggage masters and agents; rough handling of baggage.
34. Conductors and enginemen showing train orders to brakemen and firemen.
35. Derailers and throw-off switches.
36. Enginemen's observance of stop signals.
37. Men having current time table with general order inserts and up to date.
38. Cutting trains at road crossings.
39. Lading stored to prevent shifting and rolling against doors.
40. Men wearing uniforms neat and clean.
41. Promptness of station employees on arrival of trains.
42. Condition of track for high speed.
43. Tail gates in proper position on passenger trains.
44. Vestibule trap doors properly closed.
45. Black smoke.
46. Men turning turntable by air carefully.
47. Uncoupling air hose when cutting cars.
48. Firemen top dressing coal on tender to prevent it from rolling off.
49. Conductors noting if flagman goes back.
50. Track foremen properly flagging when track is broken.
51. Whistle posts; enginemen whistling for road crossings.

EXPERIENCES OF AN INSPECTOR ON THE SCHUYLKILL DIVISION

By Ira I. Strebig

After serving 39 years in the train service, 28 years of which was in the capacity of passenger train conductor, I was assigned on January 1, 1911, to my present position as inspector of passenger train service.

My instructions were to look after the efficiency of the personnel; efficiency tests had been made for a number of years previously, but at this time had developed so as to warrant the undivided attention of one man supplemented by the attention given by the division officials in their routine duties.

I had, of course, a wide acquaintance on the division, and I had the good-will of the older employees; but some of the younger element called me the "gum-shoe man." They had the impression, which often prevails under circumstances of that kind, that I had been appointed to put up jobs on them and impose some new brand of discipline. Their view was, no doubt, that this discipline might have in it a large element of injustice.

I began by doing what might be called missionary work. I circulated among the men and instructed them on the book of rules and on instructions in the time table, at the same time telling them what the company expected of them. Of course, I went over a good deal of ground which was already familiar to the men; but the time was not wasted; groundless fears were removed and the men soon found out that there was not the slightest danger that they were going to be imposed upon.

In particular, I impressed on them that it was my duty and my aim to assist them, in every way possible, in the knowledge of the things necessary to enable them to perform their individual duty to the Pennsylvania Railroad. To "hound" a man or try to get him into trouble was the farthest possible from the thoughts of the officers of the road, and,

of course, from my own purpose; and I reiterated this point until the true situation was understood.

This course has been signally successful; in fact it may be said that the heart-to-heart talks, hundreds of them, with the men in the manner here indicated, have been the chief element in bringing the efficiency of the men on this division up to the high standard which has now been attained.

In other words the making of tests to see whether or not the men comply with the rules, is in the nature of a review lesson; the real lesson, the effective instructions, is embodied in the talks which have been held with the men prior to tests or examination or without regard to such tests.

I am personally proud of the present efficiency of the train service on this division; not proud of my own doings, which are simply as here outlined, but proud of the things that the men have accomplished. Our success has been due to the elimination of carelessness and indifference and to the weeding out of derelicts and the mind poisoner; more than twenty years ago we had very vigorously throttled the use of intoxicants and have kept it under control. Another important element is the care with which men are selected for employment. The company sets a high standard, and the employing officers constantly do their best to adhere to the standard.

For the past year I have not had a fixed signal failure; and in the past five years and four months I have had but two failures of enginemen passing fixed signal in stop position. These were two tests made at a time when there was a driving snow, and one engineman ran 900 ft. past a block signal and another 33 ft. past the signal.

During the year I put up 369 signal tests on 85 enginemen on the Schuylkill division without any failure.

It is my duty to test the men systematically, and I endeavor to get five or six signal tests on each engineman per year. The main thing, however, is not the number of tests, it is the certainty that tests will be made, the knowledge among the men that the testing is carried on all the time and under a systematic plan.

The majority of our enginemen encourage the tests. They realize that the system tends to keep them alert at all times. Only last week an engineman came to me and asked me when I was going to test him, he not being aware that he had been subjected to several tests quite recently. He was much surprised when I told him this. He said that he did not care how many tests I put up on him. I have many responses like this. Of course, the last thing that a careful inspector would do would be to allow this attitude of the runners to cause any relaxation of his vigilance. I may make a test tomorrow on one of the most reliable enginemen, and may find that he fails. That queer thing, the "human equation," so called, is a thing which will never get beyond the need of being watched.

The efficiency tests, as I have observed them on my own division, also on other divisions, constitute, it seems to me, one of the most valuable assets of the Pennsylvania Railroad; although in large measure an intangible asset. To keep all of the men who are employed in the train service on the alert at all times, and by means which do not irritate the men or put any additional burden on their minds or nerves is a great thing. We have not attained perfection, but the ideal is kept constantly in view. I recall some years ago, a record of loss and damage due to carelessness, neglect of duty and indefinable inefficiencies due to many causes, which showed total losses on the division of a large amount in one year; and I compare this with the record for the year 1915 when these losses and damage amounted to only ten per cent of the former.

The company itself has, of course, made constant improvements which are to be credited with a part of this result; but the men themselves, with true devotion to the company's interest, have co-operated in all movements looking to the desired end.

We try constantly to keep in mind that the company's in-

terests and the employees' interests are in most things the same; and this is an important element with the man who seeks promotion or wishes to make himself more efficient in every way. We try to cultivate the spirit of "get together," to remember the golden rule.

On Friday evening (May 26), I was walking between stations when on reaching a point about 1,800 ft. east of a station, I noticed an extra train (engine and cabin) leaving its initial station. I had in my hand a 6-in. electric pocket lamp with $\frac{7}{8}$ -in. reflector. As the train was approaching I swung the electric pocket lamp on the engineman to stop. He answered me with two blasts of the whistle and came to a stop where I was standing, inquiring what was wrong. On seeing who I was, and being advised to proceed, he went on his way with a smile, after being told that he was alert and on the job.

EFFICIENCY TESTING ON THE SCHUYLKILL DIVISION

By J. D. Klingman
Traveling Engineman

The "efficiency test" is now a regular and an essential factor in our education of men in the train service to a strict observance of the rules. With these tests kept up with sufficient frequency the men of all classes are more vigilant and more careful; and, of course, they render better service. The men in engine service unconsciously form the habit of a strict observance of signal indications, and the tendency to take a chance on a caution or an imperfectly displayed signal is almost entirely eliminated. Our men invariably regard a signal failure as an efficiency test.

These tests are not only useful for the safety of train operation, but are an economic asset also. The observation tests reduce the damage to cars; and the losses on freight in transit have been very materially reduced.

About a year ago one of the leading railway labor journals published an article dwelling at considerable length on the great nervous strain that men in engine service were subjected to by the surprise test, as it was then called. Any one who has had an opportunity for close observation knows that this claim is unfounded. During the past six years, while riding locomotives in all classes of service, I have observed closely the performance of enginemen when efficiency tests were being made, and in no single instance has any one shown any signs of nervous strain because of a test. There is rather a feeling of satisfaction at being able to show that they are too alert to be caught by a test.

There has been quite a change of sentiment since the inauguration of the efficiency tests on our division. Men who at first were inclined to regard them as a new hardship now appreciate their value. In the past year I have had an expression of opinion from nearly all of our enginemen and I find that almost without exception they consider the efficiency test a benefit to all concerned. One engineman who spoke most highly of this test had been disciplined (on another division) a few years ago by a suspension of thirty days for overrunning a signal placed in the stop position as an efficiency test.

Possibly a good share of the success on the Schuylkill division is due to the fortunate selection of a man well qualified to perform the duties of an efficiency inspector—a man whom all regard as fair. This man [Mr. Strebis] has been in this position five years and he is always grieved by any man's failure.

We keep a record of all enginemen and firemen with whom we ride, first, by the use of the prescribed efficiency report of the motive power department covering the various duties in engine service. Next, in addition to this we carry a pocket ledger containing a key of 38 important items to be observed

in service, and a miscellaneous list of 50 items covering almost every phase of train service operation. We also have the regular tests made by the efficiency inspector, such as home signal at stop, fusee, torpedo, light out, distant signal at caution, etc.

One of the most difficult tests to make is the checking of the important duty of enginemen and firemen to call the indications of fixed signals. Everybody assumes that this duty will be performed faithfully wherever a man in authority is riding on the locomotive, so we can only judge the runner by his general efficiency. I need not say that failure to call signals has contributed to numerous disastrous railroad wrecks.

There seems to be a prevailing opinion that enginemen are more likely to overlook signal indications at night than in daylight. One writer says it is a difficult matter to have men in the cab co-operate when running high-speed trains at 3 a. m., especially in fog. It has been my observation that our men are as vigilant at 3 a. m. as at 3 p. m., and we have been able to find very few failures to properly observe signal indications at night. A short time ago while I was riding on one of our engines at night, the engineman observed an imperfectly displayed signal due to the top light being out. The day aspect was plainly visible, but the engineman acted promptly and stopped as Rule 27 in such a case requires. He was taking no chance on an efficiency test. This is not an unusual occurrence. It is rather remarkable to notice the certainty with which enginemen detect the absence of a switch signal at night, often on the adjacent tracks and not affecting in any way the conditions on the track on which they are running.

This vigilance shows the result of efficient training. It is the neglect of small things that leads to difficulties in greater matters. As long as the safety of train operation depends so largely on the human element, it would seem that more and better efficiency testing would be a benefit to all concerned—to the railroads in the prevention of costly wrecks, and to employees in the cultivation of correct and the abandonment of careless habits.

GERMAN RAILWAY "IMPERIALIZATION."—There would seem to be the beginnings of a very pretty little squabble between Prussia and other German states in regard to the administration of the railways. For years Prussia has tried hard to secure the realization of Bismarck's dream of an Imperial German State Railway system, but as the other states have realized that this would mean the extension of Prussian predominance, they have refused to fall into line. As a result, the only Imperial railways in the German Empire are those in Alsace-Lorraine, and the only state which has allowed its railways to come under the direct control of Prussia is the unimportant one of Hesse, whose lines form a section of the system officially known as the Prussian-Hessian Railway Administration. At the beginning of the war, the various German states which control individual railway systems, such as Bavaria and Wurtemberg, agreed to the "Imperialization" of all the railways within the Empire as a war-time measure, but made it clear that the concession was only of a temporary nature to meet emergency conditions. Now Prussia has proposed that this "Imperialization" shall be placed on a permanent basis. But war has not lessened the jealousy of Prussia felt by the smaller states, and Wurtemberg has lost no time in vetoing the scheme, pointing out that the existing conditions are only for the duration of the war. There can be no doubt that Bavaria, also Saxony and the Palatinate will make a similar refusal, but that will probably not deter Berlin from repeating the proposal. And a repetition may well cause friction.—*Railway Gazette, London.*

A New Type of Concrete Coaling Station

Structures of Cylindrical Section Constructed for the Frisco at West Tulsa, Okla., and Willow Springs Mo.

NEW coaling stations were completed recently for the St. Louis & San Francisco at West Tulsa, Okla. and Willow Springs, Mo., which were given the form of cylindrical towers, similar in some respects to a certain type of reinforced concrete water tower. In adopting this design all precedents for coaling stations in timber and steel have been disregarded, the design being based solely upon a consideration of the conditions imposed and the char-

acteristics of the material used. The result has been a structure of simple though pleasing outline, in which the structural requirements are fulfilled in an economical manner. The West Tulsa station has a capacity of 300 tons and the Willow Springs station a capacity of 250 tons. The former is described in detail below.

The structure is essentially a cylindrical tower with a uniform shell thickness of 9 in. and an outside diameter of 23 ft. The height is 89 ft. from the slab of concrete which serves as a footing to the flat conical roof. The upper 29 ft. 6 in. of the cylinder serves as the sides of the bin; the remaining portion acts as the bearing wall to transmit the load to the footing. Incidentally, the portion of the shaft between the bottom of the bin and the track level serves as a shelter for the coal cars while they are discharging coal into the track hopper, which occupies the portion of the concrete cylinder below the ground surface. Openings of sufficient size to permit the entrance of a car had to be cut into the shell on opposite sides, and hoods of thin reinforced concrete

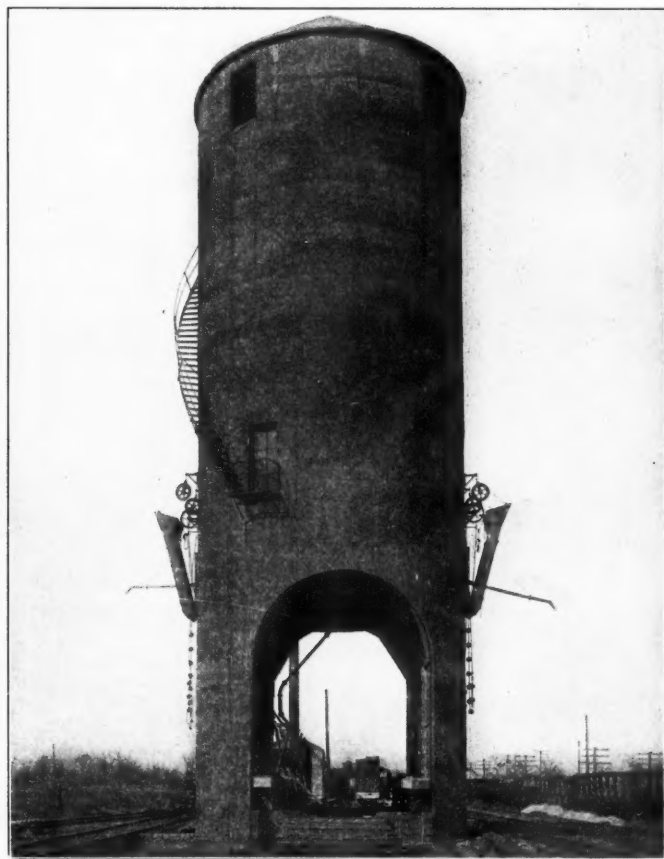
are provided outside these openings to supplement the shelter afforded by the tower barrel. The engine for operating the coal-handling machinery occupies a small lean-to, also of concrete, built against the side of the tower. The sand drying plant and boilers occupy a separate reinforced concrete building.

The storage bin has a cylindrical section 29 ft. 6 in. deep, with walls 9 in. in thickness, and a conical bottom 6½ in. thick, with a pitch of 10 in. vertical to 12 in. horizontal. The cylindrical portion is reinforced by ½-in. square bars placed in the form of hoops at various spacings, depending upon the distance from the bottom of the bin. They are secured in position by means of ½-in. vertical bars spaced 2 ft. apart circumferentially.

Special pains were taken in the design of the bottom, which is reinforced with bars placed in both circumferential and radial positions, the radial bars being attached at their outer ends to a structural steel ring located at the junction of the bottom shell with the cylindrical shell. This ring



Side View Showing Engine House, Coaling Apron and Ladder



End View of the Station

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consists of a 9-in. 34.7-lb. ship channel. The apex of the conical bottom has a hole 35 in. in diameter for the discharge of the coal. This hole is armored by a structural steel collar, from which ten ¾-in. radial rods extend out into the concrete shell in the form of a spider.

In addition to the coal space, the bin contains three small separate compartments extending the full height of the bin. Two of these are of rectangular section with 6-in. walls and

serve as shafts for the vertical legs of the coal conveyor. The third small compartment serves as a sand bin and is semi-cylindrical in section, having an interior radius of 2 ft. 9 in. and 5-in. walls.

The shell of the cylinder below the level of the storage bin is of the same thickness as in the bin, but it is reinforced on the inside by a number of pilasters, one being provided on each side of each of the car openings.

The track hopper, which occupies the bottom of the cylinder, is also of reinforced concrete in the form of an inverted pyramid, with 9-in. walls, and is supported from the sides of the barrel in a manner similar to that used in the conical bottom of the storage bin. A number of auxiliary columns and pilasters are provided for the support of the hopper and the track load. The rails of the track are carried on 20-in. 72-lb. Bethlehem I-beams, which are given an inter-

MECHANICAL EQUIPMENT

The equipment for hoisting coal consists of two strands of Fairbanks, Morse S. R. 1 steel roller chains carrying 24-in. by 30-in. V-type buckets, spaced 64 in. apart. The chain is driven by a 25-hp. 10-in. by 12-in. vertical steam engine through a $\frac{3}{4}$ -in. Jupiter steel transmission rope. The coal is fed from the track hopper into the elevator chain buckets by means of a Fairbanks, Morse beaded flight feeder 24 in. wide with $\frac{3}{16}$ -in. flights, on two strands of S. R. 4 steel roller chains, this flight feeder being operated by chain belting from the foot shaft of the main elevator. Hooded aprons are provided for coaling engines on tracks passing by both sides of the station. These aprons are fed by chutes running each way from the opening in the bottom of the storage pocket. They are 3 ft. wide, 2 ft. 5 in. deep and are provided with vertical gates.

The sand drier occupies a separate building, 76 ft. 10 in. long by 12 ft. 6 in. wide. One end of this is occupied by a boiler, the rest of the building being occupied by the sand drying room and storage bins for both wet and dry sands.

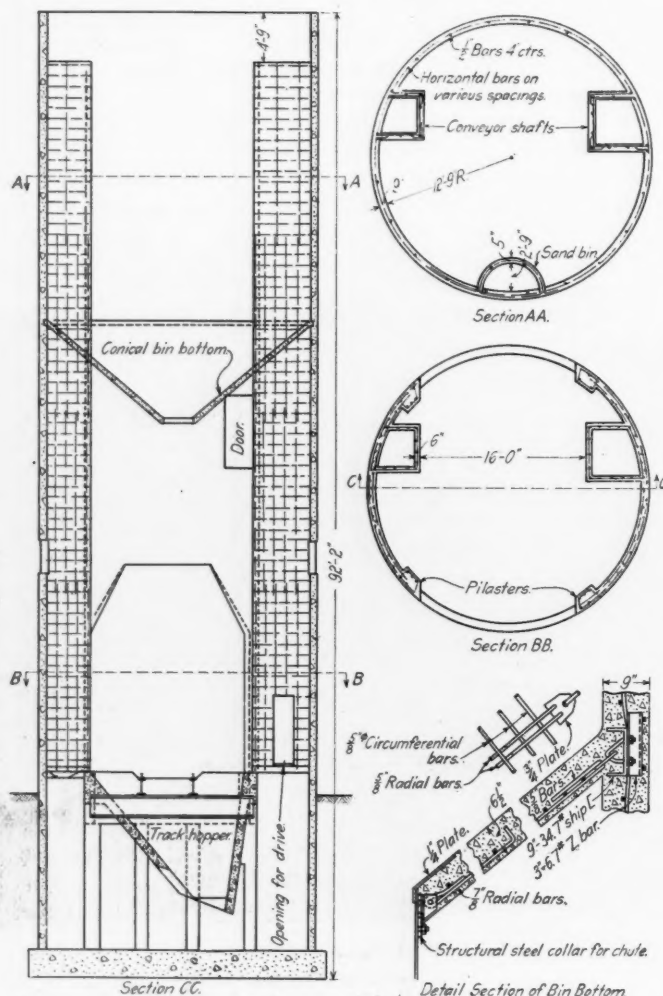
The steam drier consists of a rectangular structural steel box 7 ft. 4 in. long by 2 ft. 7 in. wide, containing a coil of steam pipes placed horizontally with a spacing between the pipes such that wet sand is readily retained above the pipes while dry sand will sift between them. The sand is passed from the drier to a receiving drum, 36 in. in diameter and 60 in. long, equipped with a self-closing hopper at the top, and the sand is transmitted from the drum to the storage bin in the coaling station by compressed air, through a 4-in. standard black pipe with long radius bends of hard cast iron. Air is supplied to the drum through a $1\frac{1}{4}$ -in. pipe from a $9\frac{1}{2}$ in. by $9\frac{1}{2}$ in. Westinghouse air compressor. The locomotive feed pipes from the storage bin are of 3-in. standard wrought pipe with malleable fittings and are provided with self-closing weather proof valves. The sand outlet fixtures are made of 20-in. galvanized steel, telescopic and counterweighted.

These stations were designed and built by Fairbanks, Morse & Company, Chicago, under the direction of F. G. Jonah, chief engineer, and R. C. Stephens, architect, of the St. Louis & San Francisco.

SPANISH RAILWAY PURCHASE.—The Andalusian Railway has purchased the greater part of the shares of the Southern Railway and has undertaken the administration of the latter. It is not known whether the two companies will be amalgamated.

RUSSIAN MANGANESE.—Manganese ore is being produced in the Gaisinsk district, in the province of Podolia, near Hosharatovo. The natural supply, a pyrolusite, is considered large. The distance of the source of supply from Odessa by railway is 221 miles.

THE RUSSIAN BATH TRAINS.—The chief committee of the Department of Ways of Communication has prepared a statement of the work of the four bath trains working at the front since the beginning of the war. The most extensive work was done during the cold winter months, when the need for baths was particularly felt. During that period about 850,000 soldiers washed themselves, making an average wash of about 2,585 per day. These soldiers received a change of clean linen in exchange for their dirty clothes, which were washed in the bath trains, and were given tea and bread, biscuits, sugar, etc., besides various gifts on fête days. In the current year, in the make-up of the bath trains, a special car will be provided for washing soldiers suffering from itch. The bath trains are playing a great part in the prevention of infectious diseases at the front. A description of one of these trains appeared in the *Railway Age Gazette* of February 26, 1915, page 378.



Structural Details

mediate support on a cross girder consisting of a 26-in. 160-lb. Bethlehem I-beam.

The footing consists of a slab of concrete 36 ft. long, 29 ft. wide and 2 ft. 6 in. thick. It is reinforced to distribute the loading over the full area of the slab. The roof consists of a thin shell of concrete placed on No. 24 self-centering, manufactured by the General Fire Proofing Company, which is supported upon eight rafters consisting of 8-in. $11\frac{1}{4}$ -lb. channels, supported on the wall and coming to a common point at the apex of the roof. The roof is protected by three-ply Johns-Manville built up absetos roofing. The hoods extending out from the two car openings are composed of thin concrete on self-centering, supported on a light structural steel frame. Similar construction is used for the roof of the engine room.

Conferences On Railway Wage Controversy

Over Fifty Executive Officers in Session at Washington
in Conference With President on Plan to Avert Strike

OVER 50 of the leading railway executives of the United States, including chairmen, presidents and vice-presidents, representing practically all of the large railway systems of the country, as well as many of the smaller ones, have been in Washington for nearly a week conferring with President Wilson on a plan which he has proposed for the settlement of the wage controversy between the railways and their train service employees.

The President has recommended the concession by the railways of the eight-hour basic day—that is, the substitution of an eight-hour basic day for the present ten-hour basic day in all the existing schedules. He has also recommended that the demand for extra pay for overtime made by the employees and the contingent proposals of the railways be postponed pending an investigation by a special commission.

The plan has been accepted by the committee representing the brotherhoods of train employees, who had voted to strike unless a satisfactory settlement were reached on their

ees to strike. After several meetings with the President the railway executives appointed a sub-committee to study the entire situation but as we go to press the deadlock still continues and it is impossible to predict the result.

President Wilson's conferences with the National Conference Committee of the Railways and the officers of the four brotherhoods began, August 14, as reported last week.

On Thursday, August 17, after the conference committee had notified the President that it could not accept his plan, the President sent a telegram to a number of presidents of the larger railways of the country asking them to come to Washington. The telegram said: "Discussion of the matters involved in the threatened railroad strike has reached a point which makes it highly desirable that I should personally confer with you at the earliest possible moment, and with the presidents of any other railways affected who may be immediately accessible. Hope you can make it convenient to come to Washington at once."

In response to this telegram a party of 19 railway chair-



Among the Railway Presidents First to Arrive in Washington.

From left to right: T. M. Schumacher, vice-president, El Paso & Southwestern; J. H. Young, president, Norfolk Southern; G. W. Stevens, president, Chesapeake & Ohio; Daniel Willard, president, Baltimore & Ohio; J. H. Carroll, general attorney, Chicago, Burlington & Quincy; Hale Holden, president, Chicago, Burlington & Quincy, and chairman of the delegation of railway presidents; M. J. Carpenter, president, Chicago, Terre Haute & Southeastern; R. H. Ashton, president, Chicago & North Western; James H. Hustis, president, Boston & Maine; W. J. Jackson, receiver, Chicago & Eastern Illinois; Frank Trumbull, chairman, Chesapeake & Ohio; L. E. Johnson, president, Norfolk & Western; W. H. Truesdale, president, Delaware, Lackawanna & Western.

demands, but was rejected by the National Conference Committee of the Railways. The railway executives, who were summoned to Washington by the President on August 17, after the plan had been rejected by the managers' committee, have declined to overrule the latter, stating that the conference committee had full authority to represent the roads, and have persisted in demanding that the entire controversy be submitted to arbitration, in accordance with the proposals originally made by the conference committee at the conclusion of the conference in New York on June 15.

The President has taken the position that "the eight-hour day has the sanction of the judgment of society in its favor and should be adopted as a basis for wages where the actual work to be done cannot be completed in eight hours," and that no other means of settlement is available to meet the national emergency created by the threat of the employ-

men, presidents and vice-presidents left New York on a special train at 4:00 p. m., arriving in Washington in the evening and a number of others from the south and west arrived on the following day.

During the afternoon the President outlined his plan to the full committee of over 600 general chairmen representing the brotherhoods, whom he had sent for on Tuesday, after being informed that the officers and sub-committee of 30 whom he met on Monday did not have full authority. The brotherhood committee gave no definite answer, pending a meeting among themselves.

On Thursday evening the railway executives held a meeting with the National Conference Committee at the New Willard Hotel to discuss the situation and on Friday morning, after a conference with the western and southern executives who had just arrived, the entire party of about 30 called

on the President at the White House. The meeting was a brief one. The President explained his plan of settlement, stating that in his opinion the eight-hour day was not an "arbitrable question" and asking the roads to concede the demand for the eight-hour basic day, leaving the other questions for investigation. One of the arguments which he advanced was that the present situation would be liable to render more acute the danger of an agitation for government ownership, which he indicated he did not favor.

Hale Holden, president of the Chicago, Burlington & Quincy, acted as spokesman for the railway officers, giving a short general reply, and suggesting that a more specific reply be given at another meeting on the following day, after the matter had been more fully considered. He stated, however, that the Conference Committee had full authority and indicated also that the railways felt the entire controversy should be submitted to arbitration.

Meanwhile the brotherhood committee held meetings at the Bijou Theatre. In the afternoon their officers notified the President that they had voted to accept his plan.

On Saturday morning the railway executives, reinforced by several others who had just arrived, called on the President again to announce their definite conclusion, reached after a conference on Friday afternoon and evening.

While they were with the President the following statement was given out from the office of the President's secretary, outlining the proposed plan of settlement and the suggested course of future procedure:

PRESIDENT WILSON'S STATEMENT

"I have recommended the concession of the eight-hour day—that is, the substitution of an eight-hour day for the present ten-hour day in all the existing practices and agreements. I made this recommendation because I believed the concession right. The eight-hour day now undoubtedly has the sanction of the judgment of society in its favor and should be adopted as a basis for wages even where the actual work to be done cannot be completed within eight hours.

"Concerning the adjustments which should be made in justice to the railroads and their stockholders in the payments and privileges to which their men are now entitled (if such adjustments are necessary), there is a wide divergence of opinion. The railroads which have already adopted the eight-hour day do not seem to be at any serious disadvantage in respect to their cost of operation as compared with the railroads that have retained the ten-hour day, and calculations as to the cost of the change must, if made now, be made without regard to any possible administrative economies or readjustments. Only experience can make it certain what rearrangements would be fair and equitable either on behalf of the men or on behalf of the railroads. That experience would be a definite guide to the Interstate Commerce Commission, for example, in determining whether, as a consequence of the change, it would be necessary and right to authorize an increase of rates for the handling and carriage of freight (for passenger service is not affected).

"I, therefore, proposed that the demand for extra pay for overtime made by the men and the contingent proposals of the railroad authorities be postponed until facts shall have taken the place of calculation and forecast with regard to the effects of a change to the eight-hour day; that, in the meantime, while experience was developing the facts, I should seek and, if need be, obtain authority from the Congress to appoint a small body of impartial men to observe and thoroughly acquaint themselves with the results with a view to reporting to Congress at the earliest possible time the facts disclosed by their inquiries, but without recommendation of any kind; and that it should then be entirely open to either or both parties to the present controversy to give notice of a termination of the present agreements with a view to instituting inquiry into suggested readjustments of pay or practice. This seems to me a thoroughly practical and en-

tirely fair programme, and I think that the public has the right to expect its acceptance."

Later in the day the railroads gave out the following statement giving the substance of Mr. Holden's statement to the President at the morning meeting:

STATEMENT ON BEHALF OF THE RAILWAYS

"The representatives of the railroads here present have given careful consideration to the proposals submitted by you for an adjustment of the critical conditions confronting us. May we again express the grave sense of responsibility upon our shoulders to discharge, as faithful trustees of the public interest, the duty to maintain and operate these properties as agencies, efficient at all times—to serve the continuous public demand for transportation service—as faithful trustees also to protect, in so far as it is in our power, the interests of the owners of these properties committed to our charge.

"In the previous stages of these negotiations, the Conference Committee of Managers has consistently adhered to the policy of arbitration as a fundamental principle—it is essentially the common right of every citizen of whatever station in life, to be heard—to have his day in court—it is indeed a substitute for wasteful litigation recognized long since in the codes of all civilized countries.

"A denial of the right to be heard does not exist under any form of government with which our race has ever been familiar and the common acceptance in international affairs, in the adjustment of public and private rights under our federal and state governments, of the principle of arbitration as an approved method for the friendly settlement of the serious contentions of the parties, has put the right to claim arbitration as a method of settling such controversies beyond question. For these reasons, we have supported our committee in their continuous demand that in these important particulars upon which no agreement could be reached, arbitration should be accorded upon any reasonable basis that might be adopted.

"The eight-hour day—I shall not at this time stop to fully analyze or comment upon the importance of the difference between the eight-hour day as commonly understood in the building and manufacturing trades and the so-called eight-hour basic day demanded in this controversy—the eight-hour day is, in our mature judgment, *when considered in connection with railroad train service*, a question upon which honest minds may differ and is therefore necessarily a subject for arbitration. In that manner the contentions of the parties may be considered and a fair answer given.

"Social questions affecting the ordinary work day in which for six days a week a regular daily routine is pursued, are those which determine how long, during each of those periods, the laborer should work, and while in some states eight hours has been adopted as the desirable or compulsory maximum, this broad land is today teeming with the contented and efficient industry of millions of workers that are working more than eight hours a day. The precedent, therefore, exists; it exists in fact and the right or wrong of it, as we feel, has not yet, in this country, passed beyond the realm of debate.

"But those are not our problems. The railroad day is a different thing, as has been patiently, and I infer, many times explained. Railroad trains run throughout the twenty-four hour period—the public demands that they run on Sundays and holidays—they start at any hour that the necessities may demand—they cannot stop until a terminal is reached, and many conditions, stated and accidental, render it impossible to restrict the hours of railroad labor to a fixed standard.

"In a general movement of some years ago, the present ten-hour basic day was negotiated and approved by the representatives of the railroad labor throughout the country and has continued with some exceptions to the present day. These

exceptions have been worked out under local conditions, different often from the general conditions affecting the question.

"In several important arbitrations of railroad rates of pay and conditions of service within recent years—the last within two years involving 98 railroads serving the entire territory between Chicago and the Pacific Coast, the 10-hour basic day was incorporated in the demands of the organizations parties thereto and made the basis by them of the rates and rules awarded by the Federal Board.

"At the present time, in a controversy now pending over the identical questions involved here and in which numerous important railroads and a national organization of switchmen are parties, an arbitration through the friendly offices of the Federal Board of Mediation has been agreed to, wherein the question of an eight-hour basic day has been submitted as an arbitrable question.

"We stand for the principle of arbitration for the settlement of industrial disputes. Arbitration is the ideal toward which public sentiment and legislation of this country have been steadily tending for the settlement of disputes between employers and employees particularly in the case of public service corporations rather than the strike and the lockout with attendant disturbances and paralysis of public business. Arbitration has been provided by legislation both state and national. So late as 1913 the federal law was perfected or improved by amendments framed in conference with some of the railroad labor leaders now refusing to arbitrate, and includes in its scope all controversies in railroad service. We invoke that principle now and are willing for the Interstate Commerce Commission to arbitrate the whole question. More than that, we are willing for the President of the United States to appoint a commission of disinterested persons to arbitrate all matters in dispute if neither the Interstate Commerce Commission nor the machinery of the Newlands act is satisfactory to the labor leaders. But we have been met with a refusal to arbitrate in any manner, and are now asked to surrender the principle and to add an additional burden of many millions per annum to the cost of railroad transportation in this country for the benefit of a class who are among the most highly paid and favored workmen in the world. This is demanded under the guise of a plea for an eight-hour day. It is in reality only an indirect plea for an enormous increase in wages.

"The intricate and technical nature of the case and the complexity of the facts make the controversy pre-eminently one for arbitration by an impartial tribunal with authority to examine into every factor and reach a decision fair and just to the employees, the owners and the public which ultimately must bear the burden. To refuse to arbitrate is an admission of the unreasonableness of the demand. Moreover the refusal is by those demanding a vital change in an *existing status*. For a party to demand a change of such a status and accompany the demand with a refusal to arbitrate is in conflict with the right standards of conduct. In this instance, for those demanding a change to refuse to submit their demands to arbitration, is indefensible.

"To say that such a demand as that now presented for a revolutionary change in the arrangements that have grown up in the development of the railroad business and involving so many complicated facts and relations and such vast additions to the cost of the country's transportation is not arbitrable is to destroy the principle of arbitration and if successful would in our judgment tend immediately to discard all of the legislation, state and national, which has been enacted in recent years and set the country back to the old days of strikes, lockouts, public disorder and business anarchy for the settlement of questions inherent in the relations of employer and employee.

"The view that so important an issue as this may not in conscience be honestly debated and therefore arbitrated raises this question above and beyond the lesser contentions

of hours of service or payment of wages—it raises it, in gravity, beyond the social or monetary questions affecting the parties before you because it tends to force, by the great weight of your spoken word, the railroads to surrender a right to be heard—a right expressly recognized by the policy of the federal legislation enacted for the purpose of adjusting these disputes and under the ban of your disapproval, expressed before the bar of public opinion, to accept as indisputable, conditions requiring, as we believe, an enormous sacrifice in efficiency of service and cost of operation of these properties. An adjustment in this manner will not stop with this controversy. It will be repeated in every industry wherein today industrial peace exists without controversy.

"It will, by the force of this high precedent, place in peril all that has been accomplished in the peaceful adjustment of labor controversies by methods of arbitration and therefore we present to you our respectful but earnest request that you do not lend the weight of your great influence against this right, which we claim, to be heard, but support the railroads in this crisis in the effort to maintain this great principle of arbitration."

Mr. Holden then explained that in accordance with past custom and the requirements of the situation, complete authority to conduct negotiations in behalf of the railroads in the present controversy had been conveyed to the Conference Committee of Managers. He further explained that the executives present had authority to speak only for the properties each represents. Telegrams were sent from the White House to other railroad executives of the country and the conference adjourned pending their arrival.

A large number of telegrams have been sent to the President from individuals and various associations from all parts of the country, many of them urging arbitration as a means of settlement and others simply urging the President to avert a strike. Among these was one from President George Pope of the National Association of Manufacturers.

"On behalf of 3,700 manufacturing organizations, employing 3,000,000 persons and utterly dependent on uninterrupted railroad service for their continued operation, I beg to express our deep appreciation of your efforts to prevent the threatened destructive stoppage of national railroad service and respectfully to urge that you will, with all the power of your great office and personality, assert and maintain the principle of arbitration for industrial disputes affecting national intercourse. No just demand can fear such a test. No unfair demand can or should survive it. We sincerely believe no man in our history has possessed such an opportunity to fortify this essential principle of public security against future attack by employer or employee."

On Sunday afternoon the White House gave out the following reply sent by the President:

"Allow me to acknowledge the receipt of your telegram of August 18, and to say in reply that I hold to the principle of arbitration with as clear a conviction and as firm a purpose as anyone, but that, unfortunately, there is no means now in existence by which arbitration can be secured. The existing means have been tried and have failed.

"This situation must never be allowed to arise again, but it has arisen. Some means must be found to prevent its recurrence, but no means can be found offhand or in a hurry or in season to meet the present national emergency.

"What I am proposing does not weaken or discredit the principle of arbitration. It strengthens it rather. It proposes that nothing be conceded except the eight-hour day, to which the whole economic movement of the time seems to point, and the immediate creation of an agency for determining all the arbitrable elements in this case in the light not of predictions or forecasts, but of established and ascertained facts. This is the first stage of the direct road to the discovery of the best permanent basis for arbitration when other means than those now available are supplied."

Governor James Withycombe of Oregon sent a telegram to

President Wilson, saying: "While the railroads are the property of the stockholders transportation service is the property of the public. Land grants and franchises were given with that implied understanding. The American people are committed to and believe in the principle of arbitration and the public welfare demands that this principle be preserved. Where differences between the railroad employees and the managers involve so serious an issue as transportation service to the public and cannot be mutually adjusted the public will and does insist on both sides submitting to arbitration."

RAILWAY EXECUTIVES IN WASHINGTON

The railway executives who attended the meeting with the President on Saturday morning were:

R. H. Aishton, president, Chicago & North Western; W. W. Atterbury, vice-president, Pennsylvania; B. F. Bush, receiver, Missouri Pacific; M. J. Carpenter, president, Chicago, Terre Haute & Southeastern; A. T. Dice, president, Philadelphia & Reading; C. R. Gray, president, Western Maryland; S. M. Felton, president, Chicago Great Western; W. J. Harahan, president, Seaboard Air Line; Fairfax Harrison, president, Southern; Hale Holden, president, Chicago, Burlington & Quincy; C. W. Hotchkiss, chairman, Virginian; J. H. Hustis, president, Boston & Maine; W. J. Jackson, receiver, Chicago & Eastern Illinois; L. E. Johnson, president, Norfolk & Western; Julius Kruttschnitt, chairman, Southern Pacific; H. R. Kurrie, president, Chicago, Indianapolis & Louisville; J. L. Lancaster, vice-president, Texas & Pacific; L. F. Loree, president, Delaware & Hudson; R. S. Lovett, chairman, Union Pacific; C. H. Markham, president, Illinois Central; E. J. Pearson, vice-president, New York, New Haven & Hartford; Ralph Peters, president, Long Island; J. H. Peyton, president, Nashville, Chattanooga & St. Louis; M. W. Potter, president, Carolina, Clinchfield & Ohio; T. M. Schumacher, vice-president, El Paso & Southwestern; G. M. Shriver, vice-president, Baltimore & Ohio; A. H. Smith, president, New York Central; G. W. Stevens, president, Chesapeake & Ohio; W. H. Truesdale, president, Delaware, Lackawanna & Western; Frank Trumbull, chairman, Chesapeake & Ohio, and chairman Railway Executives' Advisory Committee; F. D. Underwood, president, Erie; Henry Walters, chairman, Atlantic Coast Line; Daniel Willard, president, Baltimore & Ohio; J. H. Young, president, Norfolk & Southern.

Since Sunday the following additional executives arrived in Washington: W. G. Besler, president, Central of New Jersey; J. M. Dickinson, receiver, Chicago, Rock Island & Pacific; W. M. Duncan, receiver, Wheeling & Lake Erie; L. W. Hill, chairman, Great Northern; E. F. Kearney, president, Wabash; E. T. Lamb, president, Atlanta, Birmingham & Atlantic; W. L. Mapother, vice-president, Louisville & Nashville; W. C. Nixon, receiver, St. Louis & San Francisco; E. Pennington, president, Minneapolis & St. Louis; E. P. Ripley, president, Atchison, Topeka & Santa Fe; C. E. Schaff, receiver, Missouri, Kansas & Texas; G. T. Slade, vice-president, Northern Pacific; W. B. Storey, vice-president, Atchison, Topeka & Santa Fe; R. H. Wilbur, president, Lehigh & New England; W. G. Bierd, president, Chicago & Alton; E. D. Sewall, vice-president, Chicago, Milwaukee & St. Paul; E. G. Buckland, president, Central New England; H. M. Biscoe, vice-president, Boston & Albany; M. C. Kennedy, president, Cumberland Valley; J. B. Kerr, president, New York, Ontario & Western; G. L. Peck, vice-president, Pennsylvania Lines; E. T. Stotesbury, chairman, Philadelphia & Reading; J. R. Kenly, president, Atlantic Coast Line.

MONDAY'S PROCEEDINGS

At the request of the President the railway executives called at the White House again on Monday afternoon and the plan was again explained to the new arrivals. After this meeting the executives appointed a sub-committee to study the entire situation, consisting of Hale Holden, R. S. Lovett, Daniel Willard, W. W. Atterbury, A. H. Smith, Frank Trumbull, Fairfax Harrison, and E. P. Ripley.

On Monday evening Elisha Lee, chairman of the National Conference Committee issued a statement setting forth the objections to the abandonment of the principle of arbitration and explaining that the proposal of the President would not provide for a real eight-hour work day but merely an eight-hour basis for the payment of wages. The statement said:

"That the railroads should grant, under threat of a national strike, a \$50,000,000 wage preferment to a small minority of their employees, without a hearing before a public tribunal, is inconceivable in a democracy like ours. All questions at issue—wages, hours, costs, operating conditions—these are submerged by the greater issue. Shall arbitration be abandoned in the settlement of industrial disputes?"

"A nation-wide strike is unthinkable when the railroads are urging that all the matters in dispute be placed before any tribunal constituted by public authority.

"A simple illustration will suffice to show how the eight-hour basis of pay would work out. Take, for example, a freight employee paid 5 cents a mile with a day's guarantee of \$5 for 100 miles or ten hours or less.

"It is proposed to make this guarantee the same for eight hours or less. On a freight run of say, only 60 miles in ten hours, he earns \$5 for his time. It is now proposed that for this work he be paid \$5 for the first eight hours and \$1.25 for the other two hours, a total of \$6.25, increasing his pay 25 per cent.

"If, by reason of traffic delays, he is held idle on a side-track, so that he does not complete his trip until the end of 12 hours, he now is paid \$6 for his time, no matter how little work he performs. The demand is to pay him \$7.50 for this 12-hour service.

"Meanwhile the employees would continue to have the same opportunities as now to make still larger pay on the mileage basis. For example, the man on a 5-cent-a-mile rate, making, say, 150 miles in only 7 hours, earns \$7.50 for his day's work. If after this he is called for a short period of emergency work, say, only two hours, he gets another full day's guarantee of \$5, making \$12.50, in this example, for only 9 hours' service.

"Many other schedule provisions increase the wages of these well paid men without increase in their hours of service. It is because of these opportunities to take pay under mileage or arbitrary rule that their yearly earnings are so far beyond those of other workers charged with no less responsible duties."

On Tuesday the railways gave out a number of telegrams out of the hundreds which were received by the various railway officers from commercial organizations, business men, shippers, farmers and various large employers, some of which were copies of telegrams sent to the President urging that the principle of arbitration be not abandoned. Many of them said they would prefer a strike to the abandonment of the principle that such controversies should be settled by arbitration.

Many of the telegrams protested against the idea of the shippers being possibly required to pay increased rates to meet the expense of such a settlement as that proposed, and many of them urged the railroads to stand firm in the position they had taken.

Approximately 100,000 signatures to a petition on behalf of the unorganized railway employees urging the President to avert a strike have been filed at the White House by R. T. Frazier, Jr., of the Nashville, Chattanooga & St. Louis, and others whom he has interested.

Many of the presidents have given out statements and interviews explaining various features of the controversy and explaining why they were unwilling to accede to the President's proposals.

Hale Holden, president of the Chicago, Burlington & Quincy; R. S. Lovett, chairman of the Union Pacific, and Daniel Willard, president of the Baltimore & Ohio, went to the White House on Tuesday evening and had a conference with the President, lasting about an hour, during which the general situation was discussed. The conference was requested by the committee of railway executives.

There was another meeting of the railway executives at 11:30 Wednesday morning. It was a brief one and was adjourned until Wednesday evening. On Wednesday Elisha Lee, chairman of the Conference Committee, gave out a statement for the purpose of avoiding misunderstanding regarding the railways' estimate of the cost of complying with the demands. He said that investigation has confirmed the substantial accuracy of the estimate that to grant the original demands would cost \$100,000,000, and that it is now estimated that to make the concessions which the President proposes would cost more than \$50,000,000 a year.

During the day President Wilson conferred with Senator Newlands and Representative Adamson, chairmen of the Senate and House Committees on Interstate Commerce, and in evening conferred again with Messrs. Holden, Willard and Lovett, but no statement was given out as to the result.

General News Department

The president of Cuba has signed a bill providing for a commission to study the question of government ownership of railroads in Cuba.

A bill authorizing the sale of the Western & Atlantic, which is owned by the state of Georgia, was defeated in the lower house of the Georgia legislature recently by a vote of 46 to 102.

A press despatch from El Paso, Tex., says that the El Paso & Southwestern has given a voluntary increase of 7½ per cent in rate of wages of shopmen, section foremen, clerks, telegraphers and train dispatchers.

Both the Senate and the House of Representatives have passed a bill postponing until April 15, 1917, the effective date of section 10 of the Clayton law. This is the section which requires competitive bidding for railroad supplies.

Despatches from Austin, Tex., say that the Texas railroad commission is prepared to oppose the change of the fiscal year from June 30 to December 31, which is to be considered by the Interstate Commerce Commission in October.

A committee representing boilermakers, machinists, blacksmiths and sheet metal workers, their apprentices and helpers, has presented demands to P. T. Dunlop, general superintendent of motive power of the St. Louis & San Francisco, for a decrease in the number of hours of work per day and wage increases of about five cents an hour.

The Norfolk & Western proposes to extend electric operation from Vivian, W. Va., westward 10 miles, and from Welch up Tug Fork branch for five miles. The new construction necessary will begin in the near future. The addition of the proposed electric mileage will amount to more than 50 per cent of the first installation and will make the total length of line electrically operated 43 miles.

The Northern Pacific has granted its train dispatchers an increase in wages of \$10 per month, effective August 1. The new scale provides for a salary of \$190 per month for chief dispatchers, \$175 per month for night and assistant chief dispatchers, and \$165 per month for trick dispatchers. The increase, which was applied for by the men several weeks ago, was granted by the company without the formality of a conference with the employees.

All threatened strikes on the western lines of the Canadian Pacific have been abandoned. The various shop unions had been negotiating through the federated trade committee since June 15, 1916. Increases in wages agreed to by the company average about 2½ cents an hour and apply everywhere west of Fort William. The new schedule gives boilermakers 48 cents per hour. Overtime up to midnight is to be paid for time and a half, and after midnight, double time.

Dennis W. Leonard, the engine driver on the New York Central's first section No. 86, which was struck by the second section in the New York Central's Amherst wreck, died of heart disease on August 14. The wreck was caused by the second section of 86 running into the rear of the first section, throwing the two cars across the track in front of the Twentieth Century Limited. There were two employees and 25 persons killed, all of them on Leonard's train, but no blame for the accident was found to rest on him.

Congress has passed and the President approved of an amendment to the Act to Regulate Commerce, excepting from the provisions of the act which make the carrier liable for full actual loss, damage or injury, notwithstanding any limitation of liability or release; baggage of passengers, and goods other than ordinary livestock. The commission by this latest amendment is authorized to make orders permitting rates based on agreed valuations, and these valuations, the amendment provides, shall be a limitation upon the amount that can be recovered for loss or damage.

Through its safety committee the Nashville, Chattanooga & St. Louis has inaugurated a campaign against "train hopping." Within the past two weeks two boys have been crippled while trying to catch rides on freight trains of this railroad. "Hopping" is usually practiced by the boys of the smaller communities. Arrests have proved only a temporary preventative, the danger seldom being realized until injury or death results—in which case a lawsuit usually follows. The central safety committee of the road has conceived the idea that a direct appeal to the parents, stating specific cases, such as the two accidents above referred to, will bring results.

Real Safety First

Under the date of August 15, E. E. Calvin, president of the Union Pacific, sent the following letter to the employees of the company, emphasizing the importance of the personal element to the success of the safety first movement:

"Safety First implies not alone the elimination of unsafe physical conditions; its attributes are manifold. It is the very eminence of those correlated principles, Responsibility, Sobriety, Morality, Loyalty, Courtesy and Honesty.

"Responsibility: Satisfy yourself that you realize the responsibility which rests upon you personally, and that it is fully and faithfully discharged.

"Sobriety is demanded overwhelmingly on every hand; no one in the railroad world can disregard it.

"Morality is essential to Safety, an attribute that is being required ever more constantly.

"Loyalty is indispensable to your success, and its observance will achieve much for the work you are engaged in.

"Courtesy costs you nothing but a little painstaking effort to make it an element of your character; it can be shown without intrusiveness. There is no better investment for an employee or employer, and certainly nothing else so satisfactory to the public.

"Honesty, not alone in your finances, but in every effort or endeavor. Be honest with yourself.

"Your unfaltering interest in Safety First is earnestly urged, in the hope that by united vigilance and concentrated effort this property will not only maintain its present high standard, but may stand pre-eminently in the foreground at all times in the future."

The End of the Threatened Street Railway Strike in New York

At the request of Mayor Mitchel, the New York Railways Company has agreed to reinstate 14 men who were convicted of crime during the strike which occurred on August 4 and 5, and to leave to arbitration the question of whether or not the 34 men, who have been dismissed since the strike, were really dismissed for the causes alleged by the company, or for activities in connection with the strike. The following is a brief history of this strike:

Some of the labor leaders who had organized conductors and motormen of interurban roads near New York, who were already on strike for higher wages, attempted to organize the motormen and conductors of the New York Railways Company. This is the company which operates all of the green surface cars in New York City. When these men threatened a strike the executive officers went before 2,500 employees who were holding a mass meeting, and asked them whether they wanted to strike. The unanimous answer was no, and a petition was sent by the men on August 4, signed by 2,400 uniformed employees, saying that they had given no one authority to present their demands, and that they desired to remain at work. On the same day six labor leaders demanded certain changes in wages, threatening to strike if the demand was not granted by three o'clock on August 4. This demand was not granted and a strike was called, the company claiming, however, that on Sat-

urday, the 5th, and Sunday, the 6th, they operated 60 per cent of the normal service.

On Sunday Mayor Mitchel and Oscar Straus, chairman of the Public Service Commission of the First district of New York, after conference with the strike leaders and with President Shonts of the New York Railways Company, underwrote an agreement by which the company pledged itself not to interfere with employees in the exercising of their rights to organize, to reinstate strikers without prejudice, and the employees agreed not to coerce an employee to join any organization, and to accept the fact that the management had the exclusive right to discharge employees for breaches of discipline. Both sides agreed to arbitrate any questions that might arise under this agreement.

The company issued notices to its employees asking them to name by secret ballot a committee to represent them with the management. A total of 1,846 votes were cast out of 5,400 eligible to vote, and a committee of 25 employees were elected to deal with the management.

A committee representing the union men then called on General Manager Hedley, of the New York Railways Company, claiming that the company was violating its agreement by (1) interfering with the men's organizing by providing the elections under its own auspices; (2) by refusing to reinstate 14 men who had been convicted of misdemeanors during the strike, and (3) by discharging 34 men for the alleged reason of failure to return fares, insubordination, intoxication and failure to report. Another conference was held with Mayor Mitchel, with the result that the unions withdrew their allegation that the election of a committee interfered with the men's organization; the company reinstated the 14 men convicted of misdemeanors, and the cases of the 34 men discharged for cause are to go to arbitration.

M. C. B. Association Committees

The Master Car Builders' Association has issued circular No. 7, giving the list of the committees, and their members, which will report at the 1917 convention. The number of committees remains the same. However, the committee on Settlement Prices for Reinforced Wooden Cars has been discontinued, and a new committee on Standard Blocking for Cradles of Car Dumping Machines has been formed, with James McMullen, mechanical superintendent of the Erie, as chairman. The changes in the membership of the committees have not been very great except in the case of the committee on Nominations. On this committee F. W. Brazier has been retained as chairman, but the other four members are new to this committee. There have been two important changes in the chairmanships of the committees, C. D. Young being made chairman of the Brake Shoe and Brake Beam Equipment Committee, vice Professor Charles H. Benjamin, and R. L. Kleine being made chairman of the Draft Gear Committee, vice Professor L. E. Endsley. These changes have been made in accordance with the decision of the Executive Committee to have none but active railway members chairmen of the various committees. Both Prof. Benjamin and Prof. Endsley, however, will serve on their respective committees.

A number of the committees have been increased in size as follows: Brake Shoe and Brake Beam Equipment Committee, two members added; Loading Rules Committee, one member added; Car Wheel Committee, two members added; Safety Appliance Committee, one member added; Car Trucks Committee, one member added; Draft Gear Committee, three members added; Welding Truck Side Frames, Bolsters and Arch Bars Committee, five members added. The following is the complete list of the committees appointed:

STANDING COMMITTEES

1—Arbitration

J. J. Hennessey (Chairman), M. C. B., C. M. & St. P. Ry., Milwaukee, Wis.
T. W. Demarest, S. M. P., Penna. Lines, Ft. Wayne, Ind.
Jas. Coleman, S. C. D., Grand Trunk Ry., Montreal, Can.
F. W. Brazier, S. R. S., N. Y. C. R. R., New York City.
T. H. Goodnow, A. S. C. D., C. & N. W. Ry., Chicago, Ill.

2—Standards and Recommended Practice

T. H. Goodnow (Chairman), A. S. C. D., C. & N. W. Ry., Chicago, Ill.
C. E. Fuller, S. M. P., Union Pacific R. R., Omaha, Neb.
A. R. Ayers, Engr. R. S., N. Y. C. R. R., New York City.
O. C. Cromwell, M. E., Balto. & Ohio R. R., Baltimore, Md.
O. J. Parks, G. S., German-American Car Lines, Chicago, Ill.

R. E. Smith, G. S. M. P., Atlantic Coast Line R. R., Wilmington, N. C.
C. F. Thiele, G. C. I., Penna. Lines, Columbus, Ohio.
A. G. Trumbull, Asst. to G. M. S., Erie R. R., New York City.

3—Train Brake and Signal Equipment

R. B. Kendig (Chairman), G. M. E., N. Y. C. R. R., New York City.
B. P. Flory, S. M. P., N. Y. O. & W. R. R., Middletown, N. Y.
J. M. Henry, A. D. S., Penna. R. R., Youngwood, Pa.
L. P. Streeter, Air Brake Engr., Ill. Cent. R. R., Chicago, Ill.
R. B. Rasbridge, S. C. D., Phila. & Reading Ry., Reading, Pa.
W. J. Hartman, Air Brake Inst., C. R. I. & P. Ry., Chicago, Ill.
G. H. Wood, G. A. B. I., A. T. & S. F. Ry., Topeka, Kan.

4—Brake Shoe and Brake Beam Equipment

C. D. Young (Chairman), Eng. Tests, Penna. R. R., Altoona, Pa.
Prof. Chas. H. Benjamin, Purdue University, Lafayette, Ind.
R. B. Kendig, G. M. E., N. Y. C. R. R., New York City.
C. B. Young, M. E., C. B. & Q. R. R., Chicago, Ill.
C. H. Bilty, M. E., C. M. & St. P. Ry., W. Milwaukee, Wis.
G. H. Gilman, M. C. B., Nor. Pac. Ry., St. Paul, Minn.
T. J. Burns, S. R. S., Mich. Central R. R., Detroit, Mich.

5—Couplers

R. L. Kleine (Chairman), C. C. I., Penna. R. R., Altoona, Pa.
G. W. Wildin, M. S., N. Y. N. H. & H. R. R., New Haven, Conn.
F. W. Brazier, S. R. S., N. Y. C. R. R., New York City.
F. H. Stark, Supt. R. S., Montour R. R. Co., Coraopolis, Pa.
A. E. Manchester, S. M. P., C. M. & St. P. Ry., W. Milwaukee, Wis.
J. W. Small, S. M. P., S. A. L. Ry., Portsmouth, Va.
J. A. Pilcher, M. E., N. & W. Ry., Roanoke, Va.

6—Loading Rules

A. Kearney (Chairman), A. S. M. P., N. & W. Ry., Roanoke, Va.
A. B. Corinth, G. C. I., A. C. L. R. R., Wilmington, N. C.
L. H. Turner, S. M. P., P. & L. E. R. R., Pittsburgh, Pa.
R. L. Kleine, C. C. I., Penna. R. R., Altoona, Pa.
J. M. Borrowdale, S. C. D., Ill. Cent. R. R., Chicago, Ill.
C. N. Swanson, S. C. S., A. T. & S. F. Ry., Topeka, Kan.
H. C. May, S. M. P., C. I. & L. Ry., Lafayette, Ind.
E. J. Robertson, S. C. D., Soo Line, Minneapolis, Minn.

7—Car Wheels

W. C. A. Henry (Chairman), S. M. P., Penna. Lines, Columbus, Ohio.
A. E. Manchester, S. M. P., C. M. & St. P. Ry., Milwaukee, Wis.
C. W. Van Buren, G. M. C. B., Can. Pac. Ry., Montreal, Can.
J. A. Pilcher, M. E., N. & W. Ry., Roanoke, Va.
O. C. Cromwell, M. E., B. & O. R. R., Baltimore, Md.
J. M. Shackford, C. D., D. L. & W. R. R., Scranton, Pa.
H. E. Smith, Engr. Tests, N. Y. C. R. R., Collinwood, Ohio.
C. T. Ripley, G. M. I., A. T. & S. F. Ry., Chicago, Ill.
F. T. Slayton, S. M. P., Virginian Ry., Princeton, W. Va.

8—Safety Appliances

C. E. Chambers (Chairman), S. M. P., C. R. R. of N. J., Jersey City, N. J.
D. R. MacBain, S. M. P., N. Y. C. R. R., Cleveland, Ohio.
D. F. Crawford, G. S. M. P., Penna. Lines West, Pittsburgh, Pa.
C. E. Fuller, S. M. P., Union Pac. Ry., Omaha, Neb.
C. B. Young, M. E., C. B. & Q. R. R., Chicago, Ill.
H. Bartlett, G. S. M. P., B. & M. R. R., Boston, Mass.
E. A. Sweeley, M. C. B., S. A. L. Ry., Portsmouth, Va.
H. T. Bentley, S. M. P., C. & N. W. Ry., Chicago, Ill.

9—Car Construction

W. F. Keisel, Jr. (Chairman), A. M. E., Penna. R. R., Altoona, Pa.
A. R. Ayers, Engr. R. S., N. Y. Central R. R., New York City.
C. E. Fuller, S. M. P., Union Pacific R. R., Omaha, Neb.
E. G. Chenoweth, M. E., C. R. I. & P. Ry., Chicago, Ill.
J. C. Fritts, M. C. B., D. L. & W. R. R., Scranton, Pa.
C. L. Meister, M. E., Atlantic Coast Line R. R., Wilmington, N. C.
H. T. Bentley, S. M. P., C. & N. W. Ry., Chicago, Ill.

10—Specifications and Tests for Materials

C. D. Young (Chairman), Engr. Tests, Penna. R. R., Altoona, Pa.
J. R. Onderdonk, Engr. Tests, Balto. & Ohio R. R., Baltimore, Md.
J. J. Birch, D. C. I., Norfolk & Western Ry., Roanoke, Va.
I. S. Downing, G. M. C. B., C. C. C. & St. L. Ry., Indianapolis, Ind.
Frank Zeleny, Engr. Tests, C. B. & Q. R. R., Aurora, Ill.
A. H. Feters, M. E., Union Pacific Ry., Omaha, Neb.
H. B. MacFarland, Engr. Tests, A. T. & S. F. Ry., Chicago, Ill.
G. S. Spowle, S. M. P., A. C. L. R. R., Rocky Mount, N. C.
H. G. Burnham, Engr. Tests, Nor. Pac. Ry., St. Paul, Minn.

SPECIAL COMMITTEES

11—Car Trucks

J. T. Wallis (Chairman), G. S. M. P., Penna. R. R., Altoona, Pa.
E. W. Pratt, A. S. M. P., C. & N. W. Ry., Chicago, Ill.
Jas. Coleman, S. C. D., Grand Trunk Ry., Montreal, Can.
J. J. Tatum, S. F. C. D., B. & O. R. R., Baltimore, Md.
Prof. E. C. Schmidt, University of Illinois, Urbana, Ill.
C. W. Van Buren, G. M. C. B., Can. Pac. Ry., Montreal, Can.
J. McMullen, M. S., Erie R. R., Meadville, Pa.
A. R. Ayers, Engr. R. S., N. Y. C. R. R., New York City.
E. G. Chenoweth, M. E., C. R. I. & P. Ry., Chicago, Ill.
J. J. Maginn, G. F. S., Cin. Northern R. R., Van Wert, Ohio.

12—Prices for Labor and Material

P. F. Smith, Jr. (Chairman), S. M. P., Penna. Lines, Toledo, Ohio.
G. E. Carson, D. M. C. B., N. Y. C. R. R., W. Albany, N. Y.
W. L. Kellogg, S. M. P., M. K. & T. Ry., Denison, Tex.
J. E. Mehan, A. M. C. B., C. M. & St. P. Ry., W. Milwaukee, Wis.

Ira Everett, G. C. I., L. V. R. R., So. Bethlehem, Pa.
Willard Kells, A. G. S. M. P., A. C. L. R. R., Wilmington, N. C.
O. J. Parks, G. S., German-American Car Lines, Chicago, Ill.
H. L. Osman, S. C. D., Morris & Co., Chicago, Ill.
G. F. Laughlin, S. C. D., Armour & Co., Chicago, Ill.
Thos. Beaghen, Jr., M. C. B., Union Tank Line, New York City.

13—Train Lighting and Equipment

J. H. Davis (Chairman), Elec. Engr., B. & O. R. R., Baltimore, Md.
C. H. Quinn, A. E. M. P., N. & W. Ry., Roanoke, Va.
D. J. Cartwright, Asst. Elec. Engr., Lehigh Valley R. R., So. Bethlehem, Pa.
E. W. Jansen, Elec. Engr., Illinois-Central R. R., Chicago, Ill.
H. C. Meloy, Elec. Engr., N. Y. C. R. R., Cleveland, Ohio.
J. R. Sloane, Engr. Elec. Car Lighting, Penna. R. R., Altoona, Pa.
E. Wanamaker, Elec. Engr., C. R. I. & P. Ry., Chicago, Ill.

14—Nominations

F. W. Brazier (Chairman), S. R. S., N. Y. C. R. R., New York City.
D. F. Crawford, G. S. M. P., Penna. Lines, Pittsburgh, Pa.
D. J. MacBain, S. M. P., N. Y. C. R. R., Cleveland, Ohio.
C. E. Fuller, S. M. P., Union Pac. R. R., Omaha, Neb.
M. K. Barnum, S. M. P., B. & O. R. R., Baltimore, Md.

15—Arrangements

C. E. Chambers, S. M. P., C. R. R. of N. J., Jersey City, N. J.

16—Tank Cars

A. W. Gibbs (Chairman), C. M. E., Penna. R. R., Philadelphia, Pa.
Thos. Beaghen, Jr., M. C. E., Union Tank Line, New York City.
C. E. Chambers, S. M. P., C. R. R. of N. J., Jersey City, N. J.
Wm. Schlafge, G. M. S., Erie R. R., New York City.
S. Lynn, M. C. B., P. & L. E. R. R., McKees Rocks, Pa.
O. J. Parks, G. S., German-American Car Lines, Chicago, Ill.
John Purcell, Asst. to V.-P., A. T. & S. F. Ry., Chicago, Ill.

17—Draft Gear

R. L. Kleine (Chairman), G. C. I., Penna. R. R., Altoona, Pa.
Prof. L. E. Endsley, University of Pittsburgh, Pittsburgh, Pa.
W. E. Dunham, Supr. M. P. & M., C. & N. W. Ry., Winona, Minn.
J. R. Onderdonk, Engr. Tests, B. & O. R. R., Baltimore, Md.
A. R. Kipp, M. E., Soo Line, Fond du Lac, Wis.
G. W. Rink, M. E., C. R. R. of N. J., Jersey City, N. J.
J. C. Fritts, M. C. B., D. L. & W. R. R., Scranton, Pa.
R. D. Smith, S. M. P., B. & A. R. R., Boston, Mass.
A. M. Darlow, S. M. P., B. & S. R. R., Galetton, Pa.
H. C. May, S. M. P., L. V. R. R., So. Bethlehem, Pa.

18—Welding Truck Side Frames, Bolsters and Arch Bars

W. O. Thompson (Chairman), S. R. S., N. Y. C. R. R., Buffalo, N. Y.
G. W. Rink, M. E., C. R. R. of N. J., Jersey City, N. J.
J. T. Wallis, G. S. M. P., Penna. R. R., Altoona, Pa.
J. J. Hennessy, M. C. B., C. M. & St. P. Ry., W. Milwaukee, Wis.
A. M. McGill, A. S. M. P., L. V. R. R., So. Bethlehem, Pa.
R. W. Schulze, S. C. D., St. L. & S. F. R. R., Springfield, Mo.
Willard Kells, A. G. S. M. P., A. C. L. R. R., Wilmington, N. C.
J. R. Gould, S. M. P., C. & O. Ry., Richmond, Va.
E. H. Sweeley, G. F. L. R., Long Island R. R., Richmond Hill, N. Y.
C. F. Giles, S. M., L. & N. R. R., Louisville, Ky.

19—Standard Blocking for Cradles of Car Dumping Machines

Jas. McMullen (Chairman), M. S., Erie R. R., Meadville, Pa.
J. W. Senger, M. C. B., N. Y. C. R. R., Collinwood, Ohio.
J. J. Tatum, S. F. C. D., B. & O. R. R., Baltimore, Md.
F. T. Hyndman, S. M. P., C. & W. & L. E. R. R., Brewster, Ohio.
T. W. Demarest, S. M. P., Penna. Lines, Ft. Wayne, Ind.
J. E. Davis, M. M., Hocking Valley Ry., Columbus, Ohio.
G. M. Gray, S. M. P., B. & L. E. R. R., Greenville, Pa.
J. A. Pilcher, M. E., N. & W. Ry., Roanoke, Va.

New York and New England Association of Railway Surgeons

The twenty-sixth annual session of the New York and New England Association of Railway Surgeons is to be held at the Hotel McAlpin, New York, Wednesday, October 18, 1916. Dr. William S. Bainbridge is to deliver the "Address in Surgery" on the cancer problem.

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings and places of meeting of those associations which will meet during the next three months. The full list of meetings and conventions is published only in the first issue of the Railway Age Gazette for each month.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J. Annual convention, October 19-21, New Orleans, La.
AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York, Annual meeting, October 17, 18, Washington, D. C.
AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York. Annual convention, October 9-13, Atlantic City, N. J.
AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McConaughy, 165 Broadway, New York. Annual convention, October 9-13, Atlantic City, N. J.
AMERICAN RAILWAY ASSOCIATION.—J. E. Fairbanks, general secretary, 75 Church St., New York. Next meeting, November 15, 1916, Denver, Colo.
AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 17-19, New Orleans, La.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago. Annual meeting, August 24-26, 1916, Hotel Sherman, Chicago.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Annual convention, October 10, 1916, Waldorf-Astoria, New York.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—P. C. Jacobs, H. W. Johns-Manville Co., Chicago. Meetings with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.

CINCINNATI RAILWAY CLUB.—H. Boutet, Chief Interchange Inspector, Cin'ti Rys., 101 Carew Bldg., Cincinnati. Regular meetings, 2d Tuesday, February, May, September and November, Hotel Sinton, Cincinnati.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month. Room 1856, Transportation Bldg., Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1126 W. Broadway, Winona, Minn. Annual meeting, August 29 to September 1, Hotel Sherman, Chicago.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—F. W. Hager, Fort Worth & Denver City, Fort Worth, Tex. Next convention, October 17-19, Philadelphia, Pa.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 12-14, 1916, "The Breakers," Atlantic City, N. J.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meeting, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meeting, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Fire Ins. Agt., Mobile & Ohio, Mobile, Ala. Annual meeting, October 3-5, 1916, New York.

RAILWAY REAL ESTATE ASSOCIATION.—Frank C. Irvine, 1125 Pennsylvania Station, Pittsburgh, Pa. Annual meeting, October 11-13, 1916, Chicago.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September 12-14, 1916, Grand Hotel, Mackinac Island, Mich.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W., Sterling, Ill. Next annual convention, September 19-22, 1916, New York.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—L. W. Cox, 1217 Commercial Trust Bldg., Philadelphia, Pa. Annual meeting, October 18-20, Washington, D. C.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga. Next meeting, October 19, 1916, Birmingham, Ala.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grand Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Piedmont Hotel, Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., Cleveland, Ohio. Next meeting, September 5-8, 1916, Hotel Sherman, Chicago.

UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.

WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Grand Pacific Hotel, Chicago.

WESTERN SOCIETY OF ENGINEERS.—F. N. Lavfield, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings. Annual meeting, 1st Wednesday after 1st Thursday in January, Chicago.

Traffic News

All trunk lines between Chicago and Denver have abandoned the sale of wines and liquors in the dining cars.

The annual picnic and outing of the Traffic Club of Chicago will be held at Ravinia Park, Ill., on August 30.

The Baltimore & Ohio has placed a temporary embargo on grain for export through the port of Baltimore, Md.

The State of Iowa has filed a complaint with the Interstate Commerce Commission, alleging that freight rates from Marion, Iowa, to Peoria, Ill., and Springfield, and from Eastern points to interior Iowa, are excessive and unreasonable.

An officer of the Texas Central division of the Missouri, Kansas & Texas is quoted as predicting a movement of 2,000 cars of peanuts on that division. Last year there were 1,004 cars of peanuts moved from the Texas Central division.

At the request of Senator Pomerene, the bill fixing the liability of railways for bills of lading which they issue, as amended by the United States Senate, has been concurred in by the House of Representatives and has now been sent to the President. (See *Railway Age Gazette* of June 30, 1916, page 587.)

Thirty-eight ticket agents of the Chicago, Burlington & Quincy from various sections of the country, are spending 10 days in the West renewing their acquaintance with Yellowstone Park, Thermopolis, Hot Springs, Wyo., and the new Rocky Mountain National Park. The men are traveling in small detachments, the first of which left Chicago on August 19.

A hearing on the application of the Union Pacific system for an advance in rates on shipments of refrigerator cars east from Idaho points will be held on September 23 before an examiner of the Interstate Commerce Commission at Boise, Idaho. The date of the hearing on an advance in freight rates on green fruit shipped east from Idaho points, filed some weeks ago by the Oregon Short Line, has not yet been set.

The through train service between Boston, Mass., and Washington, D. C., will not be discontinued, it is now announced, until September 29. This is the weekly service of the Federal Express which runs by way of Poughkeepsie. This service was to have been discontinued September 17 but on account of the desire of people returning from vacations in New England to avoid going through New York because of infantile paralysis, the train will be operated for two weeks longer.

The Grand Rapids (Mich.) Association of Commerce has filed a complaint with the Interstate Commerce Commission, alleging that freight rates, particularly those on furniture to points in the East, are discriminatory in favor of competitors in Chicago, Detroit, Toledo, Milwaukee and other cities. The Toledo Produce Exchange has filed a complaint to the effect that rates on grain from that city to Missouri river points, and to eastern points, favor Chicago, Buffalo, St. Louis and other cities with which it competes, and are discriminatory against Toledo.

At a hearing before the Texas Railroad Commission, to consider the relative adjustment of rates on cotton from Texas points to Galveston and to New Orleans, an agreement was reached among the traffic officials of the north Texas railways, except the Texas & Pacific, to advance the export rates on cotton to New Orleans to 61 cents, or 8½ cents higher than the rate to Galveston. The agreement was made contingent, however, upon permission being obtained from the Interstate Commerce Commission, under the provisions of the fourth section, to meet the Texas & Pacific rates to New Orleans at competitive or junction points. The hearing was called on the application of the Galveston Commercial Association asking for an investigation of the action of the roads in putting into effect the same rates to both ports, the effect of which it said "has been to divert considerable cotton to New Orleans that might just as well have been forwarded to Galveston without benefit to anyone except the Louisiana lines and ports."

Believing that the freight traffic officials and representatives of the Illinois Central, many of whom are stationed in remote parts of the country, should be made thoroughly familiar with the road they represent and the industries and resources of the territory it serves, F. B. Bowes, vice-president of traffic, arranged for them an educational tour over the system in charge of D. W. Longstreet, freight traffic manager. A special train of eight cars, including four sleepers, a dining car, library car, office car and observation car, was made up to accommodate 70 members of the freight traffic department. The party left Chicago on July 25, and arrived at Omaha, the end of the trip, on August 12, after covering a little short of 6,000 miles. The itinerary included practically every point of importance on the system, among which the following cities were visited in the order named: Champaign, Ill.; Cairo, Memphis, Tenn.; Vicksburg, Miss.; New Orleans, La.; Jackson, Miss.; Aberdeen, Birmingham, Ala.; Jackson, Tenn.; Louisville, Ky.; Evansville, Ind.; Indianapolis, Peoria, Ill.; Springfield, St. Louis, Mo.; Freeport, Ill.; Dubuque, Iowa; Waterloo, Ft. Dodge, Sioux Falls, S. Dak.; Sioux City, Iowa, and Omaha, Neb. The train traveled only by daylight, except when it was necessary to double back over a branch line. The observation car was especially constructed so that it would seat about 50 people. A member of the party best acquainted with the locality through which the train passed, discussed the commercial, agricultural and industrial development of the section through a megaphone from the back of the car. At the more important cities the party inspected the company's yards to get an idea of their capacity for handling freight. The local commercial organizations at almost every stop of consequence entertained the men in a most hospitable fashion. The trip, it is believed, is the first of its kind ever made, and, according to Mr. Longstreet, not only increased appreciably the efficiency of the freight traffic department, but served to advertise the cities which the traffic men visited and the progressive spirit of the road which arranged the tour.

Shippers and Carriers Disagree on Demurrage Rates

Recent negotiations between the Committee on Relations of the American Railway Association and the Committee on Car Demurrage and Storage of the National Industrial Traffic League concerning proposed increases in demurrage rates have resulted in disagreement. The committee of the American Railway Association expressed its intention of proceeding to the Interstate Commerce Commission with the following proposition:

First: Two days free time, third day \$2 per car, fourth day \$3 per car, fifth day \$4 per car, sixth day \$5 per car, and all days thereafter \$5 per car.

Second: That under the average agreement the demurrage debits accruing on the first three days (instead of five days as at present) could be offset by credits accomplished by the unloading of cars on the first day of free time.

Third: That the weather rule would be abolished in connection with the straight plan.

The committee of the League has appealed to the Interstate Commerce Commission to take up the question of car demurrage for a thorough investigation and adjudication after a hearing of all parties, should new tariffs be filed by the carriers.

TRAFFIC RESTRICTIONS IN SCOTLAND.—Practically all the mainland of Scotland north of the Caledonian Canal has been made into a special military area by virtue of a notice given by the Army Council under the Defence of the Realm (Consolidation) Regulations, 1914, which provides that, with certain specified exceptions, no person shall on and after July 25 be allowed to enter the area without permission from the Commandant at Inverness. Travellers seeking to enter the area will find at Inverness something like a Continental frontier station, from which they will be turned back unless they can produce the necessary permit. The railway companies concerned are taking all possible steps to bring the new regulation to the notice of passengers intending to enter the restricted area, and are not issuing tickets thither except to passengers who have authority to enter it. Moreover, at the London stations, from which the Scottish expresses start, passengers for certain destinations are being advised to bring their registration cards with them.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

Shippers Ask Suspension of New Transcontinental Rates

So large a number of shippers appeared before the suspension board of the Interstate Commerce Commission last week, urging the suspension of the new transcontinental freight rates filed by the roads to take effect on September 1, that the commission did not have a room large enough to accommodate them. The rates are those filed in response to the commission's recent order made to meet new conditions created by the suspension of traffic through the Panama Canal. The new tariffs made considerable advances in the rates to Pacific Coast points. H. A. Scandrett, interstate commerce attorney for the Union Pacific, said that the reductions in coast rates were made to allow the roads to compete with the canal route, and that the higher rates are in accordance with those suggested by the commission itself in its previous decisions in the intermountain case. Representatives of some of the Pacific Coast shippers protested that the new rates were higher than those suggested by the commission. Some of them only asked that the rates be postponed until January 1.

Several hundred representatives of shippers from almost every part of the United States appeared at the hearing, the first two days of which were devoted to the increases in eastbound rates on canned goods, dried fruits, peas and beans, salmon and similar articles. Among the principal protestants were the representatives of Portland, San Francisco, Seattle, Astoria, Los Angeles, Fresno, Honolulu, Denver, Louisville, Chicago, New York, Des Moines, Omaha and other Missouri river cities. The attorney for the Spokane Merchants' Association opposed the suspension of the tariffs as a whole, as did the representatives of the Arizona, New Mexico and Nevada state railroad commissions. Some of the shippers of food products said that their business would be ruined by the new rates if allowed to go into effect without postponement.

On August 17 and 18 testimony was heard as to the advances in westbound rates, those comprised in Schedule C, on which the commission had authorized reductions to meet the canal competition, and had rescinded its relief order. Representatives of the shippers at San Francisco, Portland, Seattle and Los Angeles presented a most vigorous protest against the advances, which Seth Mann, representing the San Francisco Chamber of Commerce, said would increase the revenues of the roads by from \$10,000,000 to \$12,000,000 a year. The rates were criticised as unreasonable per se and discriminatory, and it was stated that unless the tariffs are suspended, application for injunctions will be filed in the federal courts at San Francisco, Seattle and Portland, on the ground that the commission has no authority to allow advances in rates that were reduced to meet water competition, except upon a showing of a change in conditions other than that created by the elimination of that competition.

Post Office Department Loses Freight Rate Case

United States v. Alabama & Vicksburg et al. Opinion by the commission:

The first-class rating provided in southern classification on postal cards, envelopes, and newspaper wrappers, stamped, when shipped for the account of the government on government bills of lading in cars protected by government locks and seals, minimum weight 30,000 lb., is found by the commission to be just and reasonable, and is prescribed as a reasonable maximum rating in official and western classification territories.

The post office department urged that the articles involved should be rated substantially the same as unstamped envelopes, cards, and wrapping paper, and asked for a rating on stamped envelopes and stamped newspaper wrappers in carloads not to exceed fifth class in official classification territory and third class in western and southern classification territories, and a rating on stamped postal cards in carloads not to exceed third class in all three classification territories. (40 I. C. C., 405.)

Class Rates from Chestnut Ridge Railway Stations

Opinion by Commissioner Meyer:

Divisions proposed to be paid to the Chestnut Ridge Railway by the Lehigh & New England, and connections out of joint class rates proposed from points on the Chestnut Ridge to points west of the Buffalo-Pittsburgh line, and out of class rates between stations on the Chestnut Ridge and on the Delaware, Lackawanna & Western, found excessive to the extent that they exceeded \$3.25 per car on traffic handled over the Palmerton branch of the Chestnut Ridge, and \$4.50 per car on traffic handled over the main line. The Chestnut Ridge is owned by the New Jersey Line Company of New Jersey. (41 I. C. C., 62.)

Second Industrial Railways Case

New Jersey, Indiana & Illinois:

The divisions accorded by the Wabash and its connections to the New Jersey, Indiana & Illinois are not found excessive. This line extends from Pine, Ind., where it connects with the Wabash, about 12 miles north through Sweeney's, Wharton's and Kizer to South Bend, Ind., where it connects with the Grand Trunk. The Singer Manufacturing Company has a plant at South Bend, and supplies a large part of the traffic. For this reason and because the Singer company is interested in the company, the Wabash and its connections proposed to cancel their joint rates with the New Jersey. The cancellations were disapproved generally in the commission's original report, 34 I. C. C., 596. (41 I. C. C., 42.)

Johnstown & Stony Creek:

The Johnstown & Stony Creek is found to be a common carrier industrial line. This line exchanges traffic with the Baltimore & Ohio and Pennsylvania. It principally serves the Lorain Steel Company, and it also serves 15 other industries directly, and many others besides on two team tracks which it maintains. The divisions to be paid will be based on the principles in Chicago, West. Pullman & Southern case, 37 I. C. C., 408:

In so far as the industrial line serves the plant in interplant switching and other purely plant service the cost of such service and the investment in facilities used exclusively to perform that service must be excluded in calculating the cost of the switching service to and from the trunk lines. The investment in facilities used both for plant service and interchange switching can only be included in the proportion that they are used in interchange switching. Interior plant switching or any other service differing radically in nature from the general work of switching cars between industries and connections should be segregated as to investment and operating costs of the industrial line so far as this may be feasible. The engine hour will usually be found a safer guide than cars handled for making this general separation. For interior plant switching the industry benefited should be charged with the allocated capital and operating costs. The remaining operating and capital costs measure the maximum which may be received net for other switching, either in the form of switching charges or allowances, there being a minimum charge for the shortest switching and a somewhat higher charge for the longer distance switching. From its entire business the industrial line should not earn more than a fair return on the property devoted to the public use, less reserve for accrued depreciation, and including material and supplies in the investment.

The Pennsylvania and Baltimore & Ohio may properly decline to apply their Johnstown locality rates to and from points on the Johnstown & Stony Creek. (41 I. C. C., 46.)

Allowances to Kanawha, Glen Jean & Eastern:

The Kanawha, Glen Jean & Eastern is found to be a common carrier entitled to accept divisions of rates from its trunk line connections. This road is in the New River district of West Virginia. It extends from Tamroy, W. Va., 8 miles northeast through Kilsythe Junction and Sugar Creek Junction, to Glen Jean, W. Va., with a branch that extends from Sugar Creek Junction 6.2 miles northwest to Pax, W. Va. About 5 miles of sidetracks also are maintained. The road connects at Pax with the Virginian's main line from Deepwater, W. Va., to Hampton Roads, Va., and at Kilsythe Junction with the Loup Creek branch of the Chesapeake & Ohio that extends from Thurmond, W. Va., on the main line through Deepwater to Hampton Roads, 7 miles west to Glen Jean, and thence 3 miles southwest and parallel to the Glen Jean to Kilsythe Junction. Nearly all the traffic of the Glen Jean consists of outbound bituminous coal. A number of the coal mines it serves are operated by the McKell Coal & Coke Company, which is interested in the railway. (41 I. C. C., 53.)

Northampton & Bath Railroad:

The Northampton & Bath is found to be a common carrier.

This line extends from Northampton, Pa., about 7.1 miles east through Navarro, Weaversville, Lerchs, Jacksonville and Bath to Bath Junction, Pa. It connects at Northampton with the Central of New Jersey, and at Bath Junction with the Lackawanna and the Lehigh & New England. The line was built in the interest of the Atlas Portland Cement Company, which has a large plant at Navarro.

Commissioner Harlan dissents (41 I. C. C., 68.)

PERSONNEL OF COMMISSIONS

Walter Alexander has been appointed chairman of the Railroad Commission of Wisconsin to succeed Halford Erickson, who resigned from that position in May. Mr. Alexander has been a member of the commission since February, 1915, previous to which he was for 13 years assistant district master mechanic and district master mechanic of the Chicago, Milwaukee & St. Paul. He was born in Glasgow, Scotland, in 1872, and was brought to this country in 1873. He received a common school education in Milwaukee, and served an apprenticeship as a machinist and draftsman with the St. Paul, later being employed as a fireman on the same road. He entered the University of Wisconsin in 1893, and graduated from the course in mechanical engineering in 1897, receiving a second degree in engineering the following year. For three years he was an instructor in engineering at the University of Wisconsin, one year at Armour Institute and one at the University of Missouri. He then returned to railway work as assistant district master mechanic of the St. Paul at Minneapolis, Minn. Two years later he was transferred to Milwaukee, Wis., to a similar position, and later was promoted to district master mechanic at that point, which was the position he held at the time of his appointment to the railroad commission.



W. Alexander

COURT NEWS

Killing Stock—Negligence Must be Proved

The Texas Court of Civil Appeals holds that evidence that a train was run at an excessive speed without proper warning signals while passing through a town where the railroad was not required to fence its track, and that a mare was killed, and section men carried her away after the train had passed, does not show liability of the railroad, when other trains passed the point, and no one saw the train in question kill the mare.—I. & G. N. (Tex.) 186 S. W., 781.

Yard Accident—Contributory Negligence

The United States Circuit Court of Appeals, Second Circuit, holds that it is not contributory negligence as matter of law for a yard conductor, who was thoroughly familiar with the yard, to stop for a minute and a half on a track conversing with the yardmaster, with his back to an engine which he had a right to suppose would take another track, especially where the signal was set against the engine, so as to require the engineer to proceed with caution, having his engine under such control that he could stop it immediately if danger threatened. Rogers, Circuit Judge, dissented, as the plaintiff, an experienced man, had testified that the yard (of the New York Central at Buffalo) was a very dangerous place to work in, and one had constantly to be on the alert. About 1,600 trains moved over the cross-over in the course of eight hours.—Pennsylvania v. Groves, 231 Fed., 663.

Railway Officers

Executive, Financial, Legal and Accounting

R. J. Lockwood, vice-president and general manager of the New Iberia & Northern, and chief engineer of the Marshall & East Texas, has been appointed vice-president and general manager of the Apalachicola Northern, with office at Port St. Joe, Fla., in place of L. H. Dimmitt, who has resigned to enter other business.

Operating

C. F. Jett, who has been appointed superintendent of the Anthony & Northern, in charge of the operating, mechanical and maintenance departments with headquarters at Pratt, Kans., began his railway career as an agent for the Union Pacific in 1887. The following year he entered the service of the Colorado Midland as relief agent. In 1893, he accepted employment with the Chicago, Rock Island & Pacific as agent at Pratt, Kans., and remained in the service of this company for 15 years. A year ago he was appointed trainmaster of the Anthony & Northern, which position he held until his appointment on August 1 as superintendent of the same road, with headquarters at Pratt, Kan., as above noted.



C. F. Jett

Pierce J. Landers, whose appointment as superintendent of the Indianapolis Union Railway became effective on August 1, was born in Indianapolis, Ind., on July 17, 1870. He was educated in the public and private schools of that city and entered railway service on July 15, 1888, with the Pennsylvania Lines. From this time on until July 31, 1898, he was successively rodman, superintendent's clerk, draftsman and assistant engineer on the Indianapolis and Vincennes division. On August 1, 1898, he became roadmaster of the Wisconsin Central, with headquarters at Oshkosh, Wis., and in September, 1900, was made division engineer of this same railway, with offices at Fond du Lac, Wis., remaining there until September 1, 1902, when he entered the service of the Indianapolis Union Railway as assistant engineer. In January, 1907, he was promoted to engineer maintenance of way of the Indianapolis Union Railway, and held this position until March 1, 1916, from which time up to August 1, 1916, he was acting superintendent.



P. J. Landers

C. L. Harris has been appointed assistant superintendent of the Toronto district of the Canadian Northern, eastern lines, with headquarters at Rosedale, Ont., with jurisdiction over the Muskoka, Trenton and Rideau subdivisions. Effective August 15. G. A. Hoag, assistant superintendent at Toronto, Ont., has been appointed assistant superintendent of the Toronto district,

with headquarters at Trenton, Ont., with jurisdiction over the Picton, Maynooth, Tweed, Irondale and Brockville subdivisions and the Trenton yard. The position of superintendent of branch lines has been abolished, and George Collins, superintendent at Trenton, has been appointed special representative with headquarters at Toronto, reporting to the general manager. Effective September 1.

W. A. Whitney, whose appointment as superintendent of transportation of the Union Pacific, with headquarters at Omaha, Neb., has been noted, was born at Sacramento, Cal., in 1858. He



W. A. Whitney

began his railway career as a messenger for the Alameda & Southern 39 years ago, and while in that capacity studied telegraphy. He served on the Southern Pacific, the Oregon Short Line, Northern Pacific, Atchison, Topeka & Santa Fe and Union Pacific as telegrapher and train despatcher, and while on the Union Pacific was made assistant superintendent at Laramie, Wyo., and later was promoted to division superintendent at Ogden, Utah. After a period of ill health which necessitated an extended retirement he returned to

railway work on the Denver & Rio Grande as train despatcher, but was soon promoted to superintendent of transportation with headquarters at Denver, Colo. He resigned this position to become superintendent of the Southern Pacific and served in this capacity at various points on the system until his appointment as general superintendent of the Oregon Short Line two years ago. Mr. Whitney's present appointment became effective on August 15.

A. J. Hills, general superintendent of the Canadian Northern, eastern lines, at Toronto, Ont., has been assigned to other duties, and the matters heretofore handled by the general superintendent have been assumed by the general manager.

Edward Wilson Mason, whose appointment as general superintendent of the Western Pacific, with headquarters at San Francisco, Cal., has been announced, was born at Moberly, Mo., on March 23, 1877. He



E. W. Mason

was educated in the public and high schools of Peoria, Ill., and Tacoma, Wash., and first entered railway service as a call boy on the Northern Pacific in June, 1893. After learning telegraphy he worked as an operator from the fall of 1895 to 1898, at various points on the line. From 1898 to 1899, he was a despatcher at Missoula, Mont., and from June, 1899, to September, 1900, operator and ticket clerk at Helena, Mont. From the latter date until September, 1902, he was despatcher and night chief despatcher at Tacoma,

Wash., following which he was made trainmaster of the Seattle-Tacoma Interurban with headquarters at Kent, Wash. He returned to the Northern Pacific as night chief despatcher at Missoula, Mont., in May, 1903, and in May, 1904, was made chief despatcher and trainmaster at Seattle, Wash. He then entered the service of the Western Pacific at San Francisco, Cal., and from November 28, 1909, to May 1, 1911, was car accountant

and superintendent of telegraph for that road. He was next stationed at Sacramento, Cal., as division superintendent until August 1, 1916, when he was appointed general superintendent at San Francisco.

F. E. Dewey, general manager of the Wellsville & Buffalo at Buffalo, N. Y., has at his own request been relieved as general manager, and the duties of that office have been assumed by A. Weber, vice-president, at Buffalo. Effective September 1.

O. H. McCarty, superintendent of the northern division of the St. Louis & San Francisco at Ft. Scott, Kan., has been appointed superintendent of the southwestern division, with headquarters at Sapulpa, Okla., vice J. M. Chandler, assigned to other duties; H. H. Brown, superintendent of the western division at Enid, Okla., has been appointed superintendent of the northern division, with headquarters at Ft. Scott, Kan., vice Mr. McCarty, and E. C. Lilley has been appointed superintendent of the western division, with headquarters at Enid, Okla., vice Mr. Brown.

Traffic

W. D. Clifton has been appointed division freight agent of the Union Pacific with office at Cheyenne, Wyo.

Donald S. Dixon has been appointed industrial agent of the Chicago, Great Western, with headquarters at Chicago, Ill.

Logan A. Mizener has been appointed assistant general freight agent of the Chicago, St. Paul, Minneapolis & Omaha, vice Walter D. Burr, promoted.

Albion M. Fenton, who has been appointed general freight agent of the Chicago, St. Paul, Minneapolis & Omaha with office at St. Paul, Minn., was born on January 27, 1869, at Cresco,



A. M. Fenton

Iowa. He was educated in the common schools of his native city and entered railway service April 4, 1886, from which time to 1887, he was consecutively telegraph operator and agent for the Minneapolis, St. Paul & Sault Ste. Marie. From 1887 to 1888, he was operator on the Chicago, St. Paul, Minneapolis & Omaha and from 1888 to 1900, agent at various places along the line. From 1901 to August, 1903, he was traveling agent and from August, 1903 to July, 1906, he was general agent with office at Helena, Mont. In July,

1906, he was promoted to district freight and passenger agent with headquarters at Duluth, Minn., where he remained until July, 1910, being then made assistant general freight agent with headquarters at Minneapolis, Minn. He remained in this position until his recent appointment as general freight agent, effective August 1.

George C. Wright has been appointed chief of tariff bureaus, and supervisor of tariffs of the Chicago, St. Paul, Minneapolis & Omaha, effective August 15.

R. C. Caples, general traffic manager of the Western Maryland at Baltimore, Md., having resigned, the position of general traffic manager has been discontinued.

W. E. Hunt, general agent of the Great Northern at Cincinnati, Ohio, has been appointed general agent, with headquarters at Great Falls, Mont., vice C. S. Merritt, resigned, and J. H. Carroll has been appointed general agent with headquarters at Cincinnati, Ohio, vice Mr. Hunt.

R. D. Williams, general agent of the Erie at Los Angeles, Cal., has been appointed manager of Pacific coast traffic, with headquarters at San Francisco, Cal., vice C. W. Colby, deceased. J. A. Lloyd, general agent at Salt Lake City, Utah, has been appointed general agent with headquarters at Los Angeles, Cal.,

vice Mr. Williams and M. O. Culton has been appointed general agent in charge of freight and passenger traffic, with headquarters at Salt Lake City, Utah, vice Mr. Lloyd.

James Westmoreland Hunter, whose promotion to the position of general freight agent of the Southern Railway, with headquarters at Birmingham, Ala., has already been announced in these columns, has been in the service of the Southern Railway since 1890. He was born on February 23, 1871, at Atlanta, Ga., and was educated in the common schools of that city and at a business college in Chattanooga. He entered railroad service January 17, 1890, as stenographer to the assistant general freight agent of the East Tennessee, Virginia & Georgia, now a part of the Southern Railway, at Selma, Ala., and remained in that office until February 1, 1896, serving respectively as trace clerk, rate clerk and chief clerk. He was then transferred to Raleigh, N. C., as chief clerk to the division freight agent at that point and served successively as rate clerk and chief clerk to the division freight agent at Birmingham to June 14, 1899, soliciting freight agent at Selma, Ala., to July 1, 1900, commercial agent at Selma until December 1, 1905, and division freight agent, also at Selma, until June 1, 1911, at which time he became assistant general freight agent of the Southern Railway at Mobile, Ala. It is this position he leaves to take up his new duties as general freight agent at Birmingham, Ala., as above noted.

Dudley G. Gray, general freight agent of the Western Maryland at Baltimore, Md., has been appointed freight traffic manager, with headquarters at Baltimore, effective September 1. Mr. Gray was born at Columbus, Ohio, in 1868, and after going through the public schools, graduated from the Ohio State University. He entered the service of the Baltimore & Ohio as messenger in the office of the division freight agent at Columbus in 1887, and occupied all the various positions up to chief clerk in that office. He was transferred to Pittsburgh in 1897 as chief clerk in the general freight office. In 1902, Mr. Gray returned to Columbus as division freight agent and in 1905 went back to Pittsburgh as senior division freight agent. He was later promoted to general freight agent at Pittsburgh, having entire jurisdiction over the lines west of Cumberland, and held that position until his resignation on December 31, 1912, because of ill-health. After a vacation of two months, however, he returned to railway service as general western freight agent of the Western Maryland at Pittsburgh. On November 1 of the same year, he was promoted to general freight agent at Baltimore, which position he will leave to become freight traffic manager on September 1.



D. G. Gray

Engineering and Rolling Stock

A. R. Baldwin has been appointed master mechanic of the Anthony & Northern, with headquarters at Pratt, Kan.

M. P. Northam, office engineer of the Southern Railway at Washington, D. C., has been appointed supervising engineer.

F. B. Tapley has been appointed an assistant engineer of the Canadian Government Railways with headquarters at Moncton, N. B.

T. R. Ratliff has been appointed engineer maintenance of way of the Indianapolis Union Railway, with office at Indianapolis, Ind., effective August 1.

Thomas Windle has been appointed acting master mechanic of the Midland Valley, with headquarters at Muskogee, Okla., vice C. D. Powell, resigned.

Purchasing

G. F. Williams has been appointed general storekeeper of the Midland Valley, with headquarters at Muskogee, Okla.

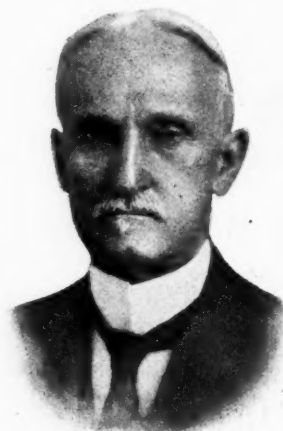
T. N. Souter has been appointed storekeeper of the Southern Pacific, with headquarters at Houston, Tex., vice R. L. Preis, deceased.

W. F. Castle has been appointed storekeeper of the San Antonio, Uvalde & Gulf, with office at North Pleasanton, Tex., vice G. F. Williams, resigned, to accept service with another company.

OBITUARY

P. E. Dombaugh, division passenger agent of the Wabash, with office at Toledo, Ohio, died in that city on August 20 of heart failure.

Colonel William P. Clough, chairman of the board of directors of the Northern Pacific, died at his home in New York on August 18. William Pitt Clough was born at Freetown, N. Y., March 20, 1845. He graduated from the Northwestern State Normal School at Edinboro, Pa., in 1862 and taught school for two years. He then went into business and at the same time studied law. He went to Rochester, Minn., in 1867 and there began the practice of law. In 1880 he was appointed western counsel for the Northern Pacific, and in 1887 left the Northern Pacific to become assistant to the president—James J. Hill—of the St. Paul, Minneapolis & Manitoba. A few months later he was elected vice-president, and was elected vice-president of the successor company—the Great Northern. When the Northern Securities Company was formed Colonel Clough was made fourth vice-president, and in July, 1912, was made vice-president of the Northern Pacific. When Howard Elliott resigned as president of the Northern Pacific in August, 1914, and J. M. Hannaford was elected president, the new office of chairman of the board of directors was created and Colonel Clough elected to it.



W. P. Clough

Edward Canfield, general superintendent of the New York, Ontario & Western, at Middletown, N. Y., died on August 18, at his home in that city. He was born on May 27, 1848, and began railway work in 1869, with an engineering corps on the Erie & Genesee Valley, now part of the Erie, and subsequently served in the engineering department of different roads. He was appointed an assistant engineer on the New York, Lake Erie & Western in 1879, and later served as roadmaster of the same road. In 1882 he went to the New York, Ontario & Western as division superintendent; five years later he was appointed chief engineer and since January, 1895, was general superintendent of the same road.

NEW RAILWAY LINES IN RUSSIA.—A meeting of the Russian interdepartmental conference on the plan for railway construction in the near future was held on May 25, with the assistant minister of ways and communications as chairman. Several projects for the first and second series of railway construction were submitted. After considering these projects, the conference resolved that, of the first series, the following lines should be built: (1) Polotzk-Novograd-Volynsk, (2) Ryazan-Tula-Baranovich (for conveying timber from Polyésie); (3) Bala-Ishem-Neftedag (for the naphtha district); (4) Novobolitz-Tchernigof-Priluki; (5) Tchernigof-Kief; (6) Orsha-Vorogha; (7) Ouman-Nikolaief; (8) Dolginskaya-Pomotshnaya; (9) Pedorovka-Skadovsk-Tchory (for the beet-sugar and agricultural districts).

Equipment and Supplies

LOCOMOTIVES

THE PITTSBURGH & LAKE ERIE has ordered 10 locomotives from the American Locomotive Company.

THE NEW YORK CENTRAL has ordered 10 electric locomotives from the General Electric Company.

THE BRITISH GOVERNMENT has ordered 45 narrow gage locomotives from the Baldwin Locomotive Works.

MOSLE BROTHERS, of Cuba, recently ordered one Consolidation locomotive from the Baldwin Locomotive Works.

THE ITALIAN STATE RAILWAYS have ordered 60 superheater Consolidation locomotives from the American Locomotive Company. These locomotives will have 21¼ by 27½-in. cylinders, 53½-in. driving wheels, and a total weight in working order of 146,000 lb.

FREIGHT CARS

THE PENNSYLVANIA RAILROAD is in the market for 8 cabooses car underframes.

THE NORTHERN PACIFIC is repairing 100 box cars in its own shops at St. Paul.

THE AMERICAN BRIDGE COMPANY is inquiring for 4 40-ft., 50-ton steel box cars.

THE KIMBERLY-CLARK COMPANY, Neenah, Wis., has issued inquiries for 20 flat cars.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE is in the market for 250 ore cars.

THE LORAIN STEEL COMPANY has ordered 8 light hopper cars from the Pressed Steel Car Company.

THE BUREAU OF MINES has ordered 3 steel rescue cars from the American Car & Foundry Company.

THE PERE MARQUETTE has given an order to the Western Steel Car & Foundry Company to repair 500 cars.

THE NEW YORK, NEW HAVEN & HARTFORD is in the market for 2 insulated box cars and 4 steel underframe transformer cars.

THE KANSAS CITY SOUTHERN is in the market for 1,900 draft cars to reinforce old cars and not for 1,900 freight cars, as reported in last week's issue.

THE ATLANTIC COAST LINE, reported in last week's issue as being in the market for 100 underframes, has ordered these underframes from the American Car & Foundry Company.

THE WESTERN PACIFIC has issued inquiries for 750 40-ft., 40-ton steel center sill box cars, 250 40-ft 40-ton ventilated steel center sill box cars, and 150 36-ft., 40-ton steel center sill stock cars. The Western Pacific was reported in the *Railway Age Gazette* of July 21 as having issued inquiries for 1,000 fruit cars.

PASSENGER CARS

THE ERIE is in the market for 38 passenger car underframes.

THE NEW YORK, PHILADELPHIA & NORFOLK is in the market for 2 coaches.

THE MISSOURI PACIFIC, reported in the *Railway Age Gazette* of July 28 as being in the market for 6 dining cars, has ordered these cars from the American Car & Foundry Company.

IRON AND STEEL

THE BOSTON & MAINE has ordered 150 tons of bridge work from the Boston Bridge Works.

THE CHICAGO, BURLINGTON & QUINCY has ordered 1,478 tons of bridge steel from the American Bridge Company.

THE MINNEAPOLIS & ST. LOUIS has ordered steel for spans for a bridge at Lake street, Minneapolis, from the American Bridge Company.

Supply Trade News

The Squire-Cogswell Company has been incorporated, and will take over the railway supply business hitherto carried on under the name of Willis C. Squire & Co. The company is located in the Ellsworth building, Chicago.

W. H. Stocks, sales representative at Chicago for the Gold Car Heating & Lighting Company, New York, Ill., died in Chicago on August 15, following an illness of several months. Mr. Stocks had been in the service of the company for over 13 years.

Charles M. Terry, Inc., of Sydney, Australia, announces that it has secured the services of C. M. Barron as consulting and purchasing engineer, to be located in the company's offices, 23 Beaver street, New York. Mr. Barron has for the past five years used his efforts in studying and cultivating the Australasian market for railway supplies, machine tools and raw materials.

J. Leonard Replogle, vice-president and general manager of sales of the American Vanadium Company since March 1, 1915, and prior to that vice-president and general manager of sales of the Cambria Steel Company, is understood to be completing negotiations looking to the purchase of the American Vanadium Company for a syndicate of eastern capitalists. The stock of the American Vanadium Company consists of 7,000 shares par value \$100. The syndicate proposes to form a new company with the same name. For the \$700,000 capital stock of the present company, \$7,000,000 will be given, \$4,550,000 in cash and \$2,450,000 in 6 per cent first mortgage bonds. The new company will issue these bonds, \$5,000,000 of 7 per cent preferred and \$6,000,000 of common stock. Reports have it that Mr. Replogle will be elected president of the new company, and that James J. Flannery, the present president, will be made chairman of the board.

Pulverized Fuel Locomotives for Brazil

Dr. J. J. da Silva Freire, sub-director and locomotive superintendent of the Central Railway of Brazil, sailed on Thursday, August 17, for Rio de Janeiro. Dr. Freire has been in the United States since about May 1 last on various missions for the Central Railway of Brazil and the Brazilian Government, and attended the railway conventions at Atlantic City during June.

On account of the high cost for imported coal and fuel oil in Brazil, and the coal reaching there in a condition averaging from 30 to 60 per cent fine dust and slack, the government has been investigating as to the use of domestic bituminous coal which is found in the southern part of that country, but which has as yet been very little mined owing to its relatively inferior quality as compared with Cardiff and West Virginia coals.

About a year ago the director of the Central Railway of Brazil noticed in the *Railway Age Gazette* that the use of pulverized fuel for locomotives was being developed in this country, and through Dr. Freire arranged for the latter's assistant, Dr. Joaquim de Assis Ribeiro, chief of traction, to come to the United States to make personal investigation. Dr. Ribeiro came here during November last, remaining about three months, for the purpose of investigating the use of Brazilian domestic coals in pulverized form as well as in gas producers. On his return he made quite an elaborate report on the subject which was issued in printed form by the director, Dr. Miguel Arrajado Lisboa, during June of this year. As a result of the investigation the Central Railway of Brazil has decided to install a fuel preparing and coaling plant, with a capacity of 15 tons per hour, at Barra do Pirahy, which is an enginehouse and shop terminal located north of Rio, according to plans and specifications prepared by the International Pulverized Fuel Corporation, which company will also make the installation. Order has also been placed by this railway with the American Locomotive Company for 12 ten-wheel type passenger locomotives that will be equipped

with pulverized-fuel-burning apparatus as designed and furnished by the International Pulverized Fuel Corporation. This equipment will practically duplicate that which was installed by the Locomotive Pulverized Fuel Company on the Delaware & Hudson Company's Consolidation locomotive number 1200, which was exhibited at the mechanical conventions at Atlantic City last June.

As Barra do Pirahy is located at the junction of the San Paulo East, and Rio North Lines, it will enable these locomotives to make round trips in three directions out of that terminal and fueling station. In this connection it may be well to recall that Dr. Freire, when attending the International Railway Congress, which was held at Washington, D. C., during May, 1905, became much interested in the Mallet articulated compound locomotive that had been put into service by the Baltimore & Ohio, this being the first locomotive of that type to be placed in service in America. As a result of this investigation the Central Railway of Brazil ordered three of this type from the American Locomotive Company, which number has since been increased to a total of 29. The Central Railway of Brazil has considerable one and two per cent grade line with relatively high degree curvature and these locomotives have worked out most satisfactorily.

Harrison Railways Specialties Company

The Harrison Railways Specialties Company, incorporated in the state of Ohio, has acquired by purchase the business and good will of the Harrison Dust Guard Company, Toledo, Ohio, formerly owned by Frank B. Harrison, who has severed his connection with the organization. The head executive office of the new company will be at Sandusky, Ohio, and the general sales office at 628-629 McCormick building, Chicago, Ill. Among the devices manufactured by the company are dust guards, journal boxes, car journal lubricators, locomotive cellars, locomotive cellar lubricators. The officers of the new company are as follows:

J. J. Dauch, president; Sidney Frohman, vice-president; W. N. Thornburgh, vice-president and general manager; Frank Kennison, treasurer, and W. P. Rude, secretary and assistant treasurer. Messrs. Dauch, Frohman and Rude will have headquarters at Sandusky, Ohio; Mr. Kennison at Toledo, Ohio, and Mr. Thornburgh at Chicago, Ill. J. J. Dauch is president of the Hinde & Dauch Paper Company, the Dauch Manufacturing Company and the Waycleanse Company, and a director of the Frohman Chemical Company. Sidney Frohman has been treasurer of the Hinde & Dauch Paper Company for many years. He is also president and treasurer of the Frohman Chemical Company, treasurer of the Dauch Manufacturing Company, and a director and officer of various



J. J. Dauch



S. Frohman

other corporations. Previous to entering business, Mr. Thornburgh was in the service of the Baltimore & Ohio successively as telegraph operator and chief clerk in the operating and traffic departments. Since leaving the Baltimore & Ohio he has been consecutively district manager of the Cleveland Stone Company at New York, Boston and Chicago; manager and treasurer of the Thornburgh Coupler Attachments Company, Ltd., Detroit, Mich.; vice-president of the Ohio Quarries Company, Cleveland, Ohio; vice-president and general manager of the Metropolitan Engineering & Construction Company, Kansas City, Mo.; general manager of sales of the Standard Asphalt & Rubber Company, Chicago, Ill.; a member of the firm of Thornburgh & Kinnear, general contractors, Houston, Tex., and manufacturers' representative in the brick, stone and marble business at Pittsburgh, Pa. Mr. Thornburgh will have charge of the general sales office at Chicago, Ill.



W. N. Thornburgh

Connecticut Electric Steel Company

Edwin L. Willson, for the past five years sales engineer in charge of the railroad department of the Hazard Manufacturing Company, Wilkes-Barre, Pa., resigned on August 1 to become president of the Connecticut Electric Steel Company, Inc. Mr. Willson was born at Baltimore and received his early education in the public schools of that city. In 1905 he graduated from the Baltimore Polytechnic Institute and in 1908 graduated from Lehigh University with the degree of electrical engineer. During his school days he was engaged in railway engineering and construction work with the Westinghouse Electric & Manufacturing Company. Upon leaving school he went with the Hazard Manufacturing Company, at the Wilkes-Barre office, in charge of electrical and chemical testing. In July, 1911, he entered the sales department as sales engineer in charge of railroad work, with offices in New York City, which position he held until August 1. In his new position Mr. Willson has headquarters at 50 Church street, New York, but will shortly remove his office to Hartford-Conn., at which point the foundry is located. The plant is nearing completion and will be in operation early in October. The Connecticut Electric Steel Company, Inc., will manufacture high quality steel castings by the Heroult electric process. On account of the uniformity and high quality of electric furnace steel this product is especially adapted to the manufacture of various locomotive castings. The company expects also to develop manganese steel for making mechanical interlocking parts, such as bell cranks. Some of these castings are subject to great wear and this development it is expected will overcome the necessity of frequent rebushing of these parts.



E. L. Willson

American Railway Equipment in the Far East

Continued interest in the markets of the far east, Australia and South Africa, has led the Bureau of Foreign and Domestic Commerce, of the Department of Commerce, to undertake an investigation of the field for American railway equipment and supplies in that section of the world. Frank Rhea, of the division of valuations of the Interstate Commerce Commission, has been appointed special agent to make the investigation, and is already engaged in making arrangements for conferences with manufacturers, contractors and selling agents, which will be held during a preliminary trip to the principal manufacturing centers in this country. This preliminary trip will be made in September.

When the special agent has learned what information the manufacturers in this country want concerning railway conditions across the Pacific, he will go abroad and make a careful study on the ground of the conditions as they affect railway construction, equipment, traffic, the probable extension or reconstruction of railways, tramways, etc. While all specific opportunities for securing orders will be promptly reported, the real purpose of the investigation is to gather together the fundamental facts and conditions that will enable the American manufacturer to consider intelligently the different fields, and to determine whether it is to his advantage to enter any of them.

Manufacturers and others who wish to get in touch with Mr. Rhea before he leaves this country should address the Division of Commercial Agents, Bureau of Foreign and Domestic Commerce, Customhouse, New York.

The Largest Plate Mill in the World

The Lukens Iron & Steel Company announces that it will have its new plate mill in operation March 1, 1917. The notable feature of this mill will be the 204 in. rolls, the largest in existence, and which will be of different construction from any in use at the present time.

The two working rolls will be 34 in. in diameter and made of chilled iron. On account of their extreme length, supporting rolls will be necessary in order to provide the required strength to prevent undue springing of the rolls resulting in varying thicknesses. The lower supporting roll will be kept in motion by a friction driven spindle to avoid depending alone upon the frictional contact with the working roll for reversing the motion of the mill. This arrangement, which is entirely new to plate mill design and the very heavy proportions used, will secure the stiffness of construction which is necessary to produce uniformity in the thickness of the plate.

This new mill will enable the Lukens Iron & Steel Company to make plates 192 in. wide. These plates will exceed in width by 52 in. any now made in this country, by 36 in. any made in Great Britain, and by 26 in. the plates made at Witkowitz in Hungary, where the largest mill now built is located.

These new facilities for the making of plates, together with other additions to the plant, have necessitated a considerable increase in the number of open hearth furnaces. In addition to the sixteen now in operation, six new ones of 100 tons capacity each are now being built.

TRADE PUBLICATIONS

CHICAGO & NORTH WESTERN.—The passenger department of this road has published a new pocket map of the lake regions of northern Wisconsin, showing on a large scale thousands of lakes and streams, resorts and automobile roads.

BETTER ELECTRIC MOTORS. This is the title of a 64-page booklet recently issued by the S. K. F. Ball Bearing Company, Hartford, Conn., dealing with S. K. F. ball bearings for electric motors. The booklet tells of the advantages of ball bearings in motors under such heads as: Reduced maintenance, lubrication, durability, simplicity and cleanliness, compactness, comparative efficiency, improved commutation, etc. It shows the advantages to be obtained by using ball bearing motors for machine tools, wood-working machinery, etc., and a part of the booklet is devoted to rules for applying S. K. F. ball bearings, and directions for mounting and lubrication. The booklet is extremely well illustrated with views of motors, and machinery and diagrams showing how the ball bearings are mounted in motors for various kinds of service.

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has let a contract for the construction of a line from Lindsay, Cal., to Porterville, Cal., a distance of 12½ miles.

ATLANTA & ANDERSON (ELECTRIC).—Application will be made in Georgia for a charter to build an electric line from Atlanta, Ga., northeast to Anderson, S. C., about 120 miles. J. McCurry, Hartwell, is said to be interested.

BRANCHVILLE & BOWMAN.—See Savannah Western.

CANADIAN NORTHERN.—This company has let a contract for the construction of a line from Kamloops, B. C., to Kelowna. Work on the new bridge over the Thompson river has already been commenced, as well as grading southwest of Vernon.

CANADIAN PACIFIC.—A new subdivision has been opened for business on the Ontario division called the Camp Borden subdivision, extending from Ypres, Ontario, to Camp Borden, 4.5 miles.

EAST BROAD TOP RAILROAD & COAL COMPANY.—This company has extended its road from Woodvale, Pa., to Alvan, 2 miles. (May 5, p. 1017.)

EVANSVILLE & INDIANAPOLIS.—Wm. P. Kappes, receiver, has been authorized by the federal court to negotiate certificates to the extent of \$600,000 for a general rehabilitation of this railroad. The money will be apportioned as follows: Rolling stock, \$232,550; ties, \$27,675; rails, \$35,000; realignment, \$60,225; bridges, \$59,500; ballast, \$21,000; terminal facilities, \$122,000; miscellaneous, \$42,050.

HAMPTON & BRANCHVILLE.—See Savannah Western.

KNOXVILLE, SEVIERVILLE & EASTERN.—See Pigeon River Railroad.

MISSISSIPPI ROADS.—The Biloxi Vegetable & Fruit Growers' Association has adopted a resolution declaring in favor of building a railroad from Ocean Springs to Biloxi, about 5 miles, and has appointed a committee consisting of W. A. Reno, Hypolite Borries, and J. A. Latimer to solicit donations of right of way in return for stock in a company to build the line.

MISSOURI, KANSAS & TEXAS.—This company has awarded a contract for widening its roadbed between Osage, Okla., and Wybark, Okla. It is estimated there will be 168,000 cu. yd. of excavation.

PENNSYLVANIA RAILROAD.—This company has let a contract to the Brown-King Construction Company, Philadelphia, Pa., for grading and track work at Northumberland, Pa., to cost approximately \$50,000.

PIGEON RIVER RAILROAD.—A charter has been filed for the incorporation of the Pigeon River Railroad with \$50,000 capital to build a line from Sevierville, Tenn., south to Pigeon Forge and thence via Gatlinburg, to a point at or near the North Carolina line, about 26 miles. It is understood that the line may be leased to, and will form an extension of, the Knoxville, Sevierville & Eastern, a 30 mile line from Knoxville, Tenn., to Sevierville. The incorporators of the Pigeon River Railroad include R. H. Simmonds, L. S. Hall, Frank A. Carpenter, Frank P. Gaut, and John P. Moffett. The Pigeon River Construction Company, which is to finance and otherwise arrange for the construction of the extension, has also been incorporated. The construction will be supervised by L. E. Wooten, general manager of the Knoxville, Sevierville & Eastern. Gen. Frank Maloney, chief engineer, is now engaged in making the survey, and it is expected the construction will begin within a few weeks. It is said that the grade will not exceed one per cent. Extensive iron ore and timber lands will be developed. W. J. Oliver, president of the Knoxville, Sevierville & Eastern, is principally interested.

SAVANNAH WESTERN.—J. A. Vandegrift & Co., New York, are negotiating with the officers of the Savannah Western relative to financing the construction of this line from Estill, S. C., where connection is to be made with the Seaboard Air Line northeast

to St. Paul about 90 miles. At St. Paul connection will be made with the Northwestern Railroad of South Carolina, which extends to Sumter, also on the Seaboard Air Line. The Savannah Western was incorporated in South Carolina in September, 1914, with capital stock of \$1,000,000. The incorporators included G. H. Milligan, of Charleston, S. C., and Virgil Walker and Adrian M. Rea, of Newbern, N. C. Reports say that the Hampton & Branchville, 24 miles, and the Branchville & Bowman, 12 miles, may be absorbed and form part of the Savannah Western, in which case about 35 miles of grading will be avoided. The Branchville & Bowman will have to be converted from narrow to standard gage. To finance the proposed construction, \$2,000,000 in bonds may be issued.

TERRE HAUTE, INDIANAPOLIS & EASTERN TRACTION.—This company has acquired the necessary right-of-way to provide for the double tracking of its line from the Indianapolis (Ind.) city limits to the motor speedway, one mile. No definite plans have as yet been made for construction work.

WASHINGTON-NEWPORT NEWS SHORT LINE.—Applications have been filed with the War Department at Washington for approval of this company's plans for bridges over the Potomac, Rappahannock and York rivers. The Maryland Board of Public Works has already approved the Potomac bridge plan. This company was chartered in Virginia last January to build a railroad from Newport News, Va., to Washington, D. C. Frank S. Gannon of Staten Island, New York, is president. (February 4, 1916, p. 228.)

RAILWAY STRUCTURES

ATKINS, IOWA.—The Chicago, Milwaukee & St. Paul contemplates the construction of terminal facilities at a cost of about \$614,000. The improvements will include a 26-stall roundhouse, 90-ft. turntable, 154-ft. cinder pit, a coal handling plant, a power house 50 ft. by 80 ft., a blacksmith and machine shop 50 ft. by 90 ft., a storehouse 50 ft. by 100 ft., an ice house and other buildings, as well as a modern yard for handling increased traffic. A large amount of grading will be required in the construction of the yard, and it will be necessary to lay a number of miles of water pipe to carry water to the terminals from the Cedar river. Bids have been asked for in connection with the grading. The concrete work will probably be done by St. Paul employees.

BLACKSHEAR, GA.—The Atlantic Coast Line has awarded a contract to Little & Phillips, Cordele, Ga., for building an addition to the station at Blackshear. The work calls for the construction of a brick structure one story high, 40 ft. wide and 50 ft. long.

CHARLOTTE, N. C.—The Seaboard Air Line is reported to have let a contract to the A. M. Walkup Company, Inc., Richmond, Va., to enlarge and remodel its present two-story brick passenger station, and build an 18-ft. one-story addition to the east side and a 35-ft. one-story addition on the west side. The contract also includes the construction of an umbrella shed, granolithic platforms, etc., the installation of new lights, etc. The cost of the improvements will be about \$25,000.

CORINTH, MISS.—The Mobile & Ohio and the Southern Railway are reported to have awarded a contract to C. M. Ayres, Tuscaloosa, Ala., to erect a joint freight station costing about \$20,000.

DANBURY, CONN.—The New York, New Haven & Hartford will ask for bids as soon as plans are completed for the construction of a roundhouse, also a shop and an office building at White Street yard. The buildings are to be of frame construction with terra cotta fire wall. The roundhouse will contain eight 95-ft. stalls; the shop is to be one story high, 48 ft. by 100 ft., and the office building is to be two stories high, 42 ft. 6 in. wide by 49 ft. 8 in. long. The improvements will cost about \$65,000. In addition there will be a boiler and generator room, 48 ft. by 48 ft.; a storeroom, 36 ft. by 48 ft., with an oil storage system.

DANVILLE, ILL.—The Chicago & Eastern Illinois is erecting a passenger station at Kimball and Meyers streets. The building proper will be 20 ft. high, 78 ft. wide and 100 ft. long. The structure will have concrete foundations, brick walls with stone and terra cotta trimmings and a hollow tile roof. The approxi-

mate cost is \$95,000; the Clarke Construction Company, of Danville, Ill., has the contract for the train sheds and the structural steel will be furnished by A. Bolter's Sons, Chicago, Ill.

EAST AURORA, N. Y.—The Pennsylvania Railroad has awarded a contract to Regan & Cleary of East Aurora for the construction of a new brick and stone passenger station with platforms, shelters and driveways. The new station will be on the east side of the main track where the freight station is at present located. The latter will be moved to the west side of the tracks and new carload delivery tracks and driveways will be provided. Work will be started immediately.

ELLAVILLE, GA.—The Central of Georgia, it is said, will build a new passenger and freight station.

FORT WASHINGTON, PA.—The Philadelphia & Reading has awarded a contract to the J. E. Brenneman Company, Philadelphia, Pa., for a concrete slab bridge over Sandy run south of Fort Washington station.

JENKINTOWN, PA.—The Philadelphia & Reading has awarded a contract to the J. E. Brenneman Company, Philadelphia, for a reinforced concrete slab bridge over Tacony creek, north of Jenkintown.

KANSAS CITY, KAN.—The Kansas City Terminal has awarded contracts to the American Bridge Company for a double track, double deck bridge over the Kaw river, and an elevated structure across the river bottoms.

NEEDLES, ARIZ.—The Atchison, Topeka & Santa Fe is contemplating moving its division shops at this place to Seligman, Ariz.

NEW YORK.—Bids are wanted by the New York Public Service Commission, First district, for the construction of station finish for stations at Twenty-third street, at Twenty-eighth street, and at Canal street, on the Broadway subway, in the borough of Manhattan.

NORFOLK, VA.—The Atlantic Coast Line will build a new passenger terminal, it is said, on land recently bought at the foot of York street.

PHILADELPHIA, PA.—The Pennsylvania Railroad has given a contract to L. H. Smith, Philadelphia, for the construction of a second story office addition on the Shackamaxon street freight station. The work will cost about \$15,000.

PONT HURON, MICH.—The Grand Trunk has started work on new repair shops, to cost approximately \$700,000. There will be eight buildings in the group, which are intended to accommodate 30 passenger and 75 freight cars at one time. About 15,000 ft. of new trackage will be required.

QUAKERTOWN, PA.—The Philadelphia & Reading has awarded a contract to A. L. Carhart, Philadelphia, Pa., for a reinforced slab bridge south of Quakertown station on the Bethlehem division.

RENOVO, PA.—The Pennsylvania Railroad will use company forces to build an extension to its enginehouse at this point, including a small enginehouse office building. The addition will be built of concrete and brick with a timber and asphalt roof.

SHELLY, PA.—The Philadelphia & Reading has awarded a contract to A. L. Carhart, Philadelphia, Pa., for a reinforced slab bridge over Tohican creek, south of Shelly.

SOUTH BELOIT, ILL.—The Chicago, Milwaukee & St. Paul has commenced the construction of new terminal facilities to cost about \$65,000. The work includes the laying of additional yard tracks, the construction of a three or four-stall engine house, with an 80-ft. turntable, a 43-ft. cinder pit, a coaling plant, a power house, 18 ft. by 32 ft., and a water tank. Grading at this point was begun some time ago. (August 18, page 309.)

SPARTA, TENN.—The Nashville, Chattanooga & St. Louis will use company forces to build a new brick passenger and freight station costing about \$12,000 at Sparta, Tenn., to replace a station destroyed by fire some time ago.

RUSSIAN AND SWEDISH RAILWAYS JOINED UP.—An agreement between Russia and Sweden regarding the joining up of the Russian and Swedish railway systems by a bridge across the river Tornea was signed at Petrograd on July 15.